```
c
                                                                                                                                                                                                                                                                                                            February 28, 2003, 19:58:51; Search time 45.0389 Seconds (without alignments) 15700.357 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N_Geneseq_101001:

N_Geneseq_101002:

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

11: SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

13: SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

14: SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

15: SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

16: SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

17: SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

18: SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN1991.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl_NAN2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 atgtcatggtttagtggcct......acaccggcgggaccgctgaa 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4370478
                                           GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2185239 seqs, 1125999159 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N_Geneseq_101002:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                           Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		φ				
Result		Query				٠
NO.	Score	Match	Match Length DB	DB	n n	Description
1	313	99.7	314	22	1	Human partial card
2	313	99.7		19	AAV23246	Human adenvlylcvcl
m	295.2	94.0		22	AAD08563	Human cardiac aden
4	295.2	94.0		22	AAD08567	Human cardiac aden
2	295.2	94.0	3582	22	AAD08568	Human modified car
9	295.2	94.0		20	AAX00461	Human type VI aden
7	227.4	72.4		14		Cardiac adenylyl c
8	199.2	63.4		24		Mouse ischaemic co
6	198.2	63.1		21		Type VI adenvivi

geno		NMDA	Human NMDAR2 recep Human NMDAR2 recep	N-me	human NMDAR2 recep	steopl	cardiac adenyiyi c Lonqisporus Trypsi		Novel numan protei Drosophila melanoq	Drosophila melanog	Drosophila melanog Drosophila melanog	Pseudorabies virus	Human N-methyl-D-a	Human clone NMDA22			Human N-metnyi-D-a Human N-methyl-D-a				Human N-methyl-D-a	NMDAR2	Human NMDAR2C codi	NMDAEZC								(ACVI) isoform #1 cDNA.	1	ng protein; beta-ASP; receptor; beta-AR;		ease; congestive heart failure; eta-ASP transqene; ss.	1				cardiac ACVI isoform #1"	231, aa:Xaa) n amino acid; CDS does not					Ţ
AAS11614 AAS06036	AAC77370 AAQ79401	AAQ79400 AAQ79407	AAQ79405 AAQ79404	AAQ79372	AAQ79403	ABQ88179	AAN80926	AAT91179	AAC69681 ABL17087	ABL19835	ABL17086 ABL19834	AAD10196	AAV82910	AAZ38724	AAL47377	ABA05910	AAA95032	AAZ38723	AAL47376	ABI99189	AAV82915 AAA95038	AAZ38729	AAL47382 ABT99194	ABISSIS4	ALIGNMENTS	,	•	BP.				adenylcyclase VI (ergic Signalli ta-adrenergic	yclase; cAMP	ein receptor kinase; GRK; heart disease; conge e adenylcyclase VI; ACVI isoform; beta-ASP tra			ılifiers	1312 /*tag= a	rtial	ept= (pos:229 is an unknown	codon"	T.T.O.#			
222	121	15	15	15	15	24	4 0	18	23	23	23	22	20	21	24	24	212	21	24	24	2 5	21	24	# 7				1, 314		1	entry)	denyl		arene y; be	ate	ise; G			n/Qua	æ	t= "H	_exce "Xaa	stop	i Tag			5411.
236303 3050	3243	4274	4289	4340	4364	160771	4040 668	1438	5317	5538	9579	1734	3243	3243	3243	3243	2000	3698	3698	3698	4004	4002	4002	4004				I; CDNA;				a	1	beta-a therap	adenyl	r kina lase V			ocatio	312	produc	transl note=	include stop	11 m			2000WO-US35411
12.7	12.2	12.2	12.2	12.2	12.2	12.2	11.8	11.8	11.8	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	, , , ,				standard;			(Ilrst	al cardi	4 4	gene	lase;	ecepto	•	. 51	ц	7 \	. `	``	. • •		J		
38.8	388	38.2	38.2 38.2	38.2	38.2	38.2	37.2	37.2	36.8	36.8	30.8	36.6	36.6	36.6	36.6	36.6	36.0	36.6	36.6	36.6	36.0	36.6	36.6	0.00			77 1 1561		AAD08561;	4000	-SEP-2001	an parti		Human; card myocardium;	adenylylcyclase;	-protein r ardiac ade		o sapiens							W0200148164-A	-JUL-2001	-DEC-2000;
10	13	15	16 17	18	20	21	23	24	72 70	27	7 7 8 7 8	30	31	3 6	34	35	37	38	39	40	4 1	43	44	.			RESULT 1 AAD08561	AAD	AAD	č	- 40	Нитап		m o w	ade	G-p car	:	Ношо	Key	CDS					WOZ	5	-92
υυ	ပ	ບບ	ပပ	U (ט ט	O (၁	U			0 0)	o c	ט ט	Ü	O I	ပ	Ö	ບ	U C	o c	טט	O C	ני		į.	AAD08	G\$	AC A	X	ž	DE	X:	K K	ΚM	X X	XX	s x	FH	FF	FT	FI	FF	XX	PN X	8	AA PF
																																											0				

```
adenovirus; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                    The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present CDNA sequence encodes human partial cardiac adenylcyclase VI (ACVI) isoform which is used for energing a third beta-ASP transgene, used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; adenylylcyclase VI; AC-VI; beta-adrenergic signalling protein; transgene; gene therapy; congestive heart failure; cardiac function;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGC 300
                                                                                                                                                                  Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGCGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 314 BP; 60 A; 98 C; 108 G; 47 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 99.7%; Score 313; DB 22; Best Local Similarity 100.0%; Pred. No. 1.7e-69; Matches 314; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human adenylylcyclase isoform VI encoding cDNA.
                                                                                                                                                                                                                                       Example 5; Page 114; 153pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAV23246 standard; cDNA; 2127
              99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                              (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGGACCGCTGAA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGGACCGCTGAA 314
                                                                                                                  WPI; 2001-418260/44.
                                                                                Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of the invention.
                                                                                                                                  P-PSDB; AAE04308
            27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-JUL-1998
                                                                                Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAV23246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
AAV23246
```

셤 ò g qq

ò

g à

ŏ

```
from the present invention. The present invention describes a recombinant replication-defective viral particle (I) comprising a gene encoding a beta-adranegic signalling protein (beta-ASP) operably inked to a promoter. Also described are: (I) a recombinant pro-viral plasmid (Ia) comprising a gene encoding a beta-ASP, as above, operably linked to a promoter and further comprising a replication-defective viral genome; (2) a (mammalian) cell transfected with (I) or (Ia); an isolated polynucleotide comprising a sequence encoding a human adentylylcyclase isoform VI (AC-VI), or a variant having Ac activity; (4) a human AC-VI encoded by (3); (5) an isolated polynucleotide comprising the polynucleotide of (3); (1) can be used to form a comprising the polynucleotide of (3); (1) can be used to form a cardiac function in mammals.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence encodes human adenylylcyclase isoform VI (AC-VI)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       signalling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGTCATGGTTTAGTGGCCTTCTTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 Argrearggriffagregectregreectaaagreeargaacegaaaacagecreeger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vectors containing transgene(s) encoding beta-adrenergic signa proteins – useful for gene therapy of congestive heart failure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2127;
                                                                                                      /product= "adenylylcyclase isoform VI"
/transl_except= (pos:229..231,aa:Xaa)
/transl_except= (pos:315..317,aa:Xaa)
/note= "no stop codon given; Xaa = unknown"
                                                                                                                                                                                                                                                                                /*tag= b
/note= "n indicates a gap of about 0.5 kb"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2127 BP; 421 A; 637 C; 615 G; 452 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post SR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 313; DB 19;
Pred. No. 2.2e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99.7%; Score ... 2.2e-
100.0%; Pred. No. 2.2e-
... 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ping P,
                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 60; Fig 12A; 114pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (COLL-) COLLATERAL THERAPEUTICS (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Insel PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _9.7WO-US15610.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97US-0048933
96US-0708661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 100. Matches 314; Conservative
                                                                               .2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gao M, Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1998-193633/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; AAW53345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -05-SEP-1997;
Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-JUN-1997;
                                                                                                                                                                                                                                                                                                                                                                     WO9810085-A2
                                                                                                                                                                                                                                                                                                                                                                                                                 12-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    05-SEP-1996;
```

ö

QQ

ò g ϵ

```
241
                                                                                                                                                                                                                                                                                                                                                                                  AAD08567
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                            g
                                                                                         δ
                                                                                                                 g
                                                                                                                                            οy
                                                                                                                                                                    셤
                                                                                                                                                                                              ò
                                                                                                                                                                                                                     οg
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                      Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylayclase; adenylate cyclase; cAMP synthetase; G-protein receptor kinase; GKK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylycyclase, adenylate cyclase and GAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart and for the present DNA sequence encodes human cardiac adenylcyclase VI (ACVI) isoform which is used for generating
                         GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACGACGG 300
181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= a
/product= "Human cardiac adenylcyclase VI isoform #1"
/EC_number= "4.6.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         urdiac adenylcyclase VI (ACVI) isoform which is used for generating third beta-ASP transgene, used in the exemplification
                                      Sequence 3549 BP; 699 A; 1025 C; 1061 G; 764 T; 0 other;
                                                                                                                                                                                                                                                 Human cardiac adenylcyclase VI (ACVI) isoform #1 DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English.
                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 5; Page 122-129; 153pp;
                                                                                                                                                                      BP.
                                                                                                                                                                   AAD08563 standard; DNA; 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000WO-US35411.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0472667
                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                            ..3504
                                                                            314
                                                                                         GCGGGACCGCTGAA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (REGC ) UNIV CALIFORNIA
                                                                            GCGGGACCGCTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-418260/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAE04310
                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200148164-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-DEC-2000;
                                                                                                                                                                                                                       04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hammond HK,
                                                                                                                                                                                              AAD08563;
                         241
                                                  241
                                                                                                    301
                                                                            301
                                                                                                                                                       Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                         à
                                                 셤
                                                                            à
                                                                                                  Db
```

Length 3549;

DB 22;

94.0%; Score 295.2;

Query Match

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  congestive heart failure;
                                                                                                                                                                                                                                180
                                                                                                                                                                 61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGCCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                      /*tag= a
/product= "Human cardiac adenylcyclase VI isoform #2"
/EC_number= "4.6.1.1"
                                                                                                                                                                                                                                                    181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                               GAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCG 300
                                                                                                                                             61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                   Gaps
                                                             ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                    1 ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                              121 CCCGGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylylcyclase; adenylate cyclase; cAMP synthetase; caprotein receptor Kinase; GRK; heart disease; congestive hear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ds
                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human cardiac adenylcyclase VI (ACVI) isoform #2 DNA
Pred. No. 7.1e-65;
); Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 6; Page 134-140; 153pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
1..3507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAD08567 standard; DNA; 3552 BP.
                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-DEC-2000; 2000WO-US35411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
Best Local Similarity 97.1
Matches 300; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-418260/44.
P-PSDB; AAE04311.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301 GGCGGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200148164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAD08567;
```

```
RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAX00461
 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              M X B X B X B X B X B
                                                                                                                                                                                                                  ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         myocardium; gene therapy; beta-adrenegic receptor; beta-AR; adenylylcyclase; adenylate cyclase; cAMP synthetase; G-protein receptor kinase; GRK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ss.
 to methods and compositions for enhancing
        cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic signalling proteins (beta-ASP) which increase gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRX) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present DNA sequence encodes human cardiac adenylcyclase VI (AVCVI) isoform which is used for generating a fourth beta-ASP transgene, used in the exemplification
                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                  CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                      1 AIGTCAIGATTIAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                121 CCCGGTATATGAGCTGCCTCCGGGATGCAGCCACCCAGCCCACCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                              GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                   CCTCGGTGCCCCTGGCAGGATGACGCCTTCCATCCGGAGGGGGGGCGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                        1 AIGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                           DB 22; Length 3552;
                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= a
/product= "Human modified cardiac ACVI isoform"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; cardiant; beta-adrenergic signalling protein; beta-ASP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human modified cardiac adenylcyclase VI (ACVI) isoform cDNA
                                                                                                                                                                                        tch 94.0%; Score 295.2; DB 22; Length al Similarity 97.1%; Pred. No. 7.1e-65; 300; Conservative 0; Mismatches 9; Indels
                                                                                                                                                                   Sequence 3552 BP; 686 A; 1037 C; 1068 G; 761 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
22..3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAD08568 standard; cDNA; 3582 BP
 present invention relates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 GCCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGGGACCG 309
                                                                                                                                            of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200148164-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-JUL-200
                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAD08568;
                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
0000000000000000x0
                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
```

```
The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present colns sequence encodes human modified cardiac adenylcyclase VI (AVVI) isoform which is used for generating a beta-ASP transgene, used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                321
                                                                                                                                                                                                                                                                                                                                                   Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 295.2; DB 22; Length 3582;
Pred. No. 7.1e-65;
0; Mismatches 9; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Adenylyl cyclase type VI; human; hAC6; therapy; diagnosis; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3582 BP; 703 A; 1036 C; 1067 G; 776 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 4; Page 143-150; 153pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human type VI adenylyl cyclase cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAX00461 standard; cDNA; 4942 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 94.0%;
Best Local Similarity 97.1%;
Matches 300; Conservative
26-DEC-2000; 2000WO-US35411
                                                               99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-MAY-1999 (first entry)
                                                                                                                           (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                         WPI; 2001-418260/44
                                                                                                                                                                                             Hammond HK, Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322 GGCGGGACG 330
                                                                                                                                                                                                                                                                                          P-PSDB; AAE04312
                                                               27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAX00461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
```

S

M X

```
A canine heart cDNA library was constructed in lambda gill and was screened with a 970 bp Aatl-HincII fragment from type I adenylyl cyclase CDNA probe (encodes the first cytoplasmic domain of adenylyl cyclase, which has significant homology to other previously known types of adenylyl cyclase). One positive clone, of 5.4 kb was obtd. Positive colonies were subcloned into pucil and further subcloned and sequenced bidirectionally. The 5.4 kb clone was used to rescreen the library and on averlapping clone contg. the 5' end of the gene was isolated. Together the two clones cover the complete canine cardiac adenylyl cyclase gene. The gene is suspected of being involved in the regulation of cardiac function and it is thought that decreased activity of adenylyl cyclase in the heart may be a major factor in the development of heart failure. Thus the adenylyl cyclase gene is useful to screen cpds. which stimulate the activity
385 GAGCTGGGGCTGCGGGCAGTGGCCTTGGGCTTCGAGGATACCGAGGTGACAACGACAGGG 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131 ATGTCGTGGTTTAGTGGCCTCCTGGTCCCCAAAGTGGATGAACGGAAGACACCCTGGGGT 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Purified DNA encoding cardiac adenylyl cyclase – useful to screen for cpds. which stimulate activity of the cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .7e-48;
nes 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 4046 BP; 743 A; 1206 C; 1254 G; 843 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Regulation; cardiac function; heart; heart failure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72.4%; Score 227.4; DB 14;
89.5%; Pred. No. 7.7e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
131..3627
/*tag= a
                                                                                                                                                                                                                                              AAQ42525 standard; DNA; 4046 BP.
                                                                                                                                                                                                                                                                                                                                                                                          Cardiac adenylyl cyclase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Fig 2; 34pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (AMCY ) AMERICAN CYANAMID CO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92EP-0117374.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91US-0793961.
                                                                                                                                                                                                                                                                                                                                           14-SEP-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 89.5
Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1993-168873/21
                                                                                                                        445 GGCGGGACG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; AAR37309
                                                                        301 GCGGGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-NOV-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-0CT-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shikawa Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EP543137-A
                                                                                                                                                                                                                                                                                             AAQ42525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                 RESULT 7
                                                                                                                                                                                                                          AAQ42525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                         g
                                                                        δ
                                                                                                                     셤
                                                                                                                                                                                                                                                                         δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AANY3059) that is expressed mainly in the heart and brain. hAC6 has a similar putative structure to other adenylyl cyclase (inc.), see a similar putative structure to other adenylyl cyclase isoforms. Use, like type V, is distinguishable in that it has a larger region. hAc6 cDNA was initially isolated from a human heart cDNA region. hAc6 cDNA was initially isolated from a human heart cDNA interpretation. HAC6 cDNA sequence. The invention relates to the hAc6 gene, methods for the recombinant production of purified hAc6 and center profiles against hAc6 and cortors, probes and host cells (especially HEK-293) transformed by genes encoding polypeptides having hAc6 activity, along with can be used as a tool to screen for agonists and antagonists that stimulate/inhibit hAc6. Such compounds have therapeutic utility in treating diseases caused by aberrant activity of this enzyme, a child thac6. Such compounds have therapeutic utility in the continuation of this enzyme, and diseases whose symptoms can be ameliorated by stimulating or activities.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       205 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       265 CCCCGCTATATGAGGTGCCTCCGGGATGCAGCCACCCAGCCCCACCCCTGCGGGGCCCC 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence encodes human type VI adenylyl cyclase (hAC6, see
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Newly isolated and purified human type VI adenylyl cyclase (hAC6) bylypeptide - useful for identifying potential therapeutic agents that modulate hAC6 activity, and for the diagnosis of hAC6-associated diseases and ilsorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGGAAAACAGCCTGGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20; Length 4942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4942 BP; 953 A; 1404 C; 1512 G; 1073 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 295.2; DB 20;
Pred. No. 7.5e-65;
0; Mismatches 9;
                                                                      Location/Qualifiers
145..3651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 3; Fig 1A-I; 42pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     unhibiting the activity of hAC6
                                                                                                                                                                                                                                                                                                                                                                                        (CORT-) COR THERAPEUTICS INC
                                                                                                                                                                                                                                                                                                                 97US-0886550,
97US-0070904.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94.0%;
ilarity 97.1%;
Conservative
                                                                                                                                                                                                                                                                    98WO-US13694
                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1999-106049/09.
P-PSDB; AAW30599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 300; Conserv
                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                          Tomlinson JA;
                                                                                                                                                                   W09901547-AL
                                                                                                                                                                                                                                                                    01-JUL-1998;
                                                                                                                                                                                                                                                                                                               01-JUL-1997;
                                                                                                                                                                                                                                                                                                                                        01-JUL-1997;
                                                                                                                                                                                                             14-JAN-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                        Key
```

ij

Gaps

., κ

thought

g οy g qq

δ g

QΥ

9

```
The present invention describes a method for examining ischaemic conditions, comprising measuring the expression levels of particular genes (I) in a test sample or determining the expression profile of a gene group in the sample comprising genes selected from (I). The method is useful for examining the ischaemic condition (e.g. compressive ischaemia, occlusive ischaemia or vasospastic ischaemia) by measuring expression levels of particular genes (ABI99202 to ABI9912, encoding the protein sequences in ABB57020 to ABB57374) or by determining the expression profile of a gene group comprising these genes. The expression levels or expression profiles produced by these genes are used as an indicator when screening for ischaemic condition-improving drugs or therapeutics for ischaemic clischaemic condition improving the preparent PGR primers for a mouse ischaemic condition related sequence, when
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Examining the ischemic condition (e.g. occlusive ischemia) by measuring expression levels of particular genes defined in the specification or by determining the expression profile of a gene group comprising these
                                              180
                                                                                                               240
307
                                                                                                                                  cccdectratrangagerbecrpcedearecasecaeccaseccaeccergeeggeeec
                                                                 SS.
                                                                                                             CCTCGGTGCCCCTGGAGGCCCTTCATCCGGAGGGGCGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                              Mouse; ischaemia; compressive ischaemia; occlusive ischaemia; vasospastic ischaemia; ischaemic condition; ischaemic disease;
                                                                                                                                                                                                                                                                                                                                                                                               Mouse ischaemic condition related cDNA sequence SEQ ID NO:716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5841 BP; 1214 A; 1558 C; 1673 G; 1396 T; 0 other;
                                                                                                                                                                                               Ishii
                                                                                                                                                                              GAACTGGGGCTGCGGCAGTGGCCCTGGGCTTCGAAGATACCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nagata T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UYNI-) UNIV NIHON SCHOOL JURIDICAL PERSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 2; Page 1771-1780; 2690pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Takahashi Y,
                                                                                                                                                                                                                                                                                             BP.
                                                                                                                                                                                                                                                                                             ABI99680 standard; cDNA; 5841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _18-MAY=2001; 2001WO-JP04192.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-MAY-2000; 2000JP-0145977
                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Asai S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-034733/04.
P-PSDB; ABB57257.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200188188-A2-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ishikawa K,
                                                                                                                                                                                                                                                                                                                                                             07-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-NOV-2001
                                                                                                                                                                                                                                                                                                                              ABI99680;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genes
             191
                                                                           248
                                                                                                           181
                                                                                                                                            308
                                                                                                                                                                              241
                                                                                                                                                                                                             368
                                              121
                                                                                                                                                                                                                                                                              AB199680
                                                                                                                                                                                                                                                                                             UX 5 X E X E X E X S X E X E X E X E
             g
                                              ò
                                                                           g
                                                                                                           ò
                                                                                                                                            g
                                                                                                                                                                              õ
                                                                                                                                                                                                         g
```

```
A recombinant Adenylyl cyclase is described which lacks membrane bound domains. Separation and purification of the recombinant enzyme is much easier compared with wild type enzymes and the recombinant enzyme is more stable than the wild type enzyme which allows easier screening of compounds that stimulate and inhibit adenylyl cyclase activity. The recombinant adenylyl cyclase comprises a chimera of adenylyl cyclase comprises
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel soluble mammalian polypeptide composition comprising adenylyl cyclase activity for screening stimulators and inhibitors of adenylyl cyclase, is activated by Gsalpha
              212
                                                                                                                   180
                                                                                                                                                272
                                                                                                                                                                                                            332
9
                                                                                                                                                                                              GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                     156 GAACGCAATGGGCAGAAGCG - - - CCCACGCCACGCGAATCGAGCCAGTGGCTTCTGCGCA
                                                                                                                                                  213 CCTCGCTACATGAGCTGCCTCAAGAATGCGGAGCCACCCAGCCCCACTCCTGCAGCTCAC
 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                      121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCACCCTGCGGGGCCCC
                                                                                                                                                                              CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cyclic AMP; adenosine monophosphate; screening; stimulation; inhibition; treatment; Cholera; pituitary tumour; heart failure; ischaemia; endocrine disorder; cell necrosis; pseudohypoparathyroidism; endocrine deficiency; human; ss.
                                                                                                                                                                                                                                                       241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAAC 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adenylyl cyclase; type I; type II; recombinant; enzyme; cAMP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag= a
/product= Type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                      Type VI adenylyl cyclase coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Columns 75-78; 73pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
14..3556
/*tag= a
                                                                                                                                                                                                                                                                                                                                                BP.
                                                                                                                                                                                                                                                                                                                                               AAA53923 standard; cDNA; 4131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96US-0726214.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         95us-0005498
                                                                                                                                                                                                                                                                                                                                                                                                        03-JAN-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-578539/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tang W;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; AAB02010.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-OCT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-AUG-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US6107076-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-0CF-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gilman AG,
                                                                                                                                                                                                                                                                                                                                                                              AAA53923;
 П
                                                         61
                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                                                                                                                                  AAA53923
                            셤
                                                                                    g
                                                                                                                                                q
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                           δŽ
                                                         ò
                                                                                                                    ŏ
                                                                                                                                                                              ŏ
```

1;

Gaps

3;

DB 24; Length 5841;

Score 199.2; DB 24; Length Pred. No. 9.8e-41; 0; Mismatches 49; Indels

Query Match 63.4%; Best Local Similarity 82.3%; Matches 241; Conservative

The succession of the successi

intron 79225101022 /*tag= f /*number= 4 exon 101023101144 /*tag= g /*number= 5 intron 101145113377 /*tag= n /*tag= n /*tag= n /*tag= n /*tag= n	uc		uo	135/08 /*tag= /number= on 135837	/*tag= m /number= 1464721 /*tag= o	/number= 9 146629148761 /*tag= p /number= 9	1487621 /*tag= q /number= 0n 148884 1		<u>.</u> :		/number= 12 intron 154032158580 /*tag= v /number= 12	on 158581158802 /*tag= w /number= 13	intron 158803173982 ************************************	\ \	FM 74		/number= 15 intron 181130183612 /*tag= ab	/number 183613, /*tag=	/number= 16 intron 183801185152
FT int			FT int		FT FT exon FT		_	•		FT FT exon FT	FT FT int		FT int	FT exon FT		FT FT exon FT		FT FT exon FT	FT FT int
CC The domains may be linked by a linker peptide. The recombinant CC adenylyl cyclase is useful for screening inhibitors and stimulators CC of adenylyl cyclase activity. Inhibitors of the enzyme are useful for CC treating cholera, pituitary tumors, heart failure, ischaemia, CC endocrine disorders and cell necrosis. Stimulators of adenylyl CC cyclase are useful for treating pseudohypoparathyroidism and other XX Sequence 4131 BP; 835 A; 1190 C; 1182 G; 924 T; 0 other;	Query Match Best Local Similarity 79.9%; Pred. No. 1.7e-40; Matches 246; Conservative 0; Mismatches 59; Indels 3; Gaps 1;	QY 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60 	QY 61 GAACGCAATGGGCAGAAGCGTTCGGGCACTCGGGCAGGTGCTTCTGCACG 120 D 111111111111111111111111111111111111	0y 121 CCCGGGTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCAGCGGGCCCC 180	Qy 181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGG	Qy .241 GAACTGGGGCTGCGGGCAGTGGCCTTCGAAGATACCGAAGTGACAACGACACCG 300 D 293 GAGCTGGGGCTGCGGTCTTTGGCTTTTGATGACACTGAGGTGACCACACCGATG 352		RESULT 10 AAS11614/C	ID AAS11614 standard; DNA; 236303 BP. XX AC AAS11614;	24-0CT-2001 (first entry)	DE NUMBAN GENERAL DINA CONTAINING EXONS 2-1/ OI THE CRIMI GENE. KW CRIM-1; Human; human chromosome 2p21-16.3; ophthalmological; KW neuroprotective; renal; osteopathic; dental; vulnerary; immunogen;	KW antibody; gene therapy; neurodegenerative disease; eye disorder; KW cataract; bone morphogenic protein; BMG; renal disease; bone abnormality; KW tooth abnormality; wound; ds.		FH Key Location/Qualifiers FT exon 3310433277 FT + A = A = A = A = A = A = A = A = A = A	intron 33278;	/ Lay= /number= exon 77747	/*tag= /number= intron 779907	/*tag= /number= exon 791047	FT /*tag= e FT /number= 4

```
invention or a mimetic which antagonises or mimics an activity of a CRIMI polypeptide may be used in a method for modulating the biological activity of a polypeptide of the bone morphogenic protein (BMP) family. In this way they may be used to prevent or treat an eye disease, especially cataract formation. They may also be used to treat neurodegenerative diseases, renal and kidney disease, bone and tooth abnormalities, wounds and skin damage, e.g. by use of the nucleic acid in gene therapy by using antibodies directed against CRIMI polypeptides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates to nucleic acids from human chromosome 2p21-16.3 and the encoded peptide (and mouse and chicken orthologues) that comprises a PGECCPLP group, an insulin-like growth factor binding protein (IGFBP)-like domain, cysteine-rich domains, an RGD (undefined) group and a transmembrane domain. The protein, e.g. CRIMI, interacts with peptides of the transforming growth factor superfamily. A composition comprising an expression construct comprising the nucleic acids of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              234445 CCCTACGGCCGCAGCTCCTCCTGCGCCCTCCTTCCGCCCGGACGCGGGAGTCCCCGCCC 234386
                                                                                                                                                                                                                                                                                                                                                                      Nucleic acids from human chromosome 2p21-16.3 and the encoded peptide, useful for preventing, diagnosing and treating e.g. eye disease, especially cataract formation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78 GCGTTCGCGCCCCTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138 CCTCCGGGATGCAGAGCCACCCAGCCCCTGCGGGCCCCCTCGGTGCCCCTGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is a Human genomic DNA containing exons 2-17 the CRIM1 gene.
                                                                                                                                                                                                                                                                                                   Wilkinson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12.7%; Score 39.8; DB 22; Length 236303; 55.4%; Pred. No. 1.8; 1.1ve 0; Mismatches 62; Indels 0; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 236303 BP; 70199 A; 46544 C; 47996 G; 71563 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Angiotensin converting enzyme (ACEV) splice variant DNA #36.
                                                                                                                                                                                                                                                                                                   Kolle G,
                                                                                                                                                                                                                                                                                                   Georgas K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAS06036 standard; DNA; 3050 BP.
             /number= 16
185153..187765
/*tag= ae
                                                                                                                                                                                                                                                                                                   Holmes G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db 234385 TCTCGCCTCCTTCCTCCGG 234367
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 4; Fig 3; 169pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198 GGATGACGCCTTCATCCGG 216
                                                                                                                                                                                   24-NOV-2000;-2000WO-AU01435.
                                                                                                                                                                                                                          99AU-0004348
                                                                       'number= 17
 ad
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity 55.4 les 77; Conservative
                                                                                                                                                                                                                                                            (UYQU ) UNIV QUEENSLAND
                                                                                                                                                                                                                                                                                                                                    WPI; 2001-343951/36.
                                                                                                          WO200138519-A1
                                                                                                                                                                                                                      26-NOV-1999;
                                                                                                                                              31-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12-SEP-2001
                                                                                                                                                                                                                                                                                                 Little M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS06036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 11
AAS06036/c
                                      exon
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     XEXEXEX
```

ô

0; Gaps

```
molecules. The sequences of the invention can be used in the treatment and diagnosis of various disorders including cardiovascular diseases such as atteriosclerosis, myocardial infarction and coronary arterial thrombosis, renal diseases such as diabetic nephropathy, muscular diseases such as hypertrophy, immune disorders such as immune complex nephritis, multiple sclerosis, cancer, sarcoidosis, nonarcoidotic pulmonary granulomatous diseases such as asbestosis and vascular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The sequence represents a DNA encoding an angiotensin converting enzyme splice variant (ACEV) polypeptide. The polypeptides of the invention include variants of granulocyte colony stimulating factor receptor, glucagon, interleukin 6, platelet-derived endothelial cell growth factor, cyclin-dependent kinase inhibitor 1C, cellular tumour antigen P53, and associated incleic acids are useful for identification of variant sequences and detection of candidate compounds capable of binding the
            granulocyte colony stimulating factor receptor; glucagon; hypertrophy; platelet-derived endothelial cell growth factor; cardiovascular disease; cellular tumour antigen P53; cyclln-dependent kinase inhibitor 1C; ds; vasoactive intestinal polypeptide receptor 2; arteriosclerosis; cancer; myocardial infarction; coronary arterial thrombosis; renal disease; multiple sclerosis; immune complex nephritis; deep vein thrombosis; nonarcoidotic pulmonary granulomatous disease; endothelial abnormality;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel alternative splicing variants e.g. variant of angiotensin converting enzyme (ACEV), useful in identifying candidate compounds capable of binding to the variant and to detect anti-variant antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73 CAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGGGGGCCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
Angiotensin converting enzyme splice variant; ACEV; interleukin 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           thologies involving an endothelial abnormality such as deep vein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 22; Length 3050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches 149; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bernstein J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3050 BP; 520 A; 1032 C; 942 G; 555 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Khosravi R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 38.2;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 335-336; 519pp; English.
                                                                                                                                                                                  vascular disorder; asbestosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Azar I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.2%;
                                                                                                                                                                                                                                                                                                                                             17-NOV-2000; 2000WO-IL00766.
                                                                                                                                                                                                                                                                                                                                                                                   99IL-0132978.
99IL-0133455.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
12.2
Best Local Similarity 46.0
Matches 127; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (COMP-) COMPUGEN LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          David A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-336004/35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; AAU02936
                                                                                                                                                                                                                                                              WO200136632-A2.
                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                     17-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                          10-DEC-1999;
                                                                                                                                                                                                                                                                                                 25-MAY-2001-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .hrombosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Levine Z,
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
```

ö

193 TGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAGGAACTGGGGCTG 252

ò

```
Claim 11; Page 99-104; 156pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-JUL-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9424284-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                         AAQ79401;
                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                              AAQ79401/c
                                                                                                                                                                                               137
                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
  δλ
                                                                                                                                                                                                                                                                               엄
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                          X C X
                                                                                                                                                                                                                                                                                                             óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antipsoriatic; attiparkinsonian; noctropic; neuroprotective; osteopathic; anticonvulsant; antiarthritic; immunosuppressant; immunostimulant; cardiant; thrombolytic; coagulant; vasotropic; antidabetic; hypotensive; dermatological; immunosuppressive; antidabeterial; antiviral; antifungal; antirheumatic; antithyroid; and antianaemic. The sequences can be used for determining the presence of or predisposition to, or preventing or treating pathological conditions associated with an ORFX-associated disorder. The nucleic acids can be used to express ORFX proteins in gene therapy vectors. The proteins and nucleic acids may be used to treat cancers, proliferative disorders, neurodegenerative disorders, osteoarthritis,
                                                                                                                                                                                                                                                              vulnerary; antipsoriatic; antiparkinsonian; notropic; neuroprotective; anticonvulsant; osteopathic; antiarthritic; immunosupressant; cardiant; immunostimulant; thrombolytic; coaqulant; vasotropic; antidiabetic; antidiabetic; antidiabetic; antidiabetic; antianemic; gene therapy; cancer; proliferative disorder; hypertension; neurodegenerative disorder; proliferative disorder; hypertension; neurodegenerative disorder; proliferative disorder; hypertension; cardiovascular disease; diabetes mellitus; hypothyroidism; SCID; AIDS; severe combined immunodeficiency; malaria; autoimmune disorder; asthma; allergy; aplastic anaemia; nocturnal haemodoblunria; burn; wound; bone damage; cartilage damage; antinflammatory disease; coagulation;
                                                                                                                                                                                                                                                    cytostatic; hepatotropic; nootropic; neuroprotective;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAC74446 to AAC77606 encode the proteins given in AAB40237 to AAB43397, which represent the human ORFX open reading frames 1 to 3161. The ORFX sequences have activities such as: cytostatic; hepatotropic; vulnerary;
Novel nucleic acids and peptides derived from open reading useful for treating e.g. cancers, proliferative disorders, neurodegenerative disorders and cardiovascular disease -
                                                                                                                                                                                                                        Human ORFX ORF2925 polynucleotide sequence SEQ ID NO:5849.
                                                                 2383 CAGGCGGGCCGGTGCACCCAGCGGGCAGCGAGCTG 2348
                                                                                                                                                                                                                                                     Human; open reading frame; ORFX; detection;
                                          CGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 5; Page 5022-5024; 5507pp; English.
                                                                                                                                    AAC77370 standard; cDNA; 3174
                                                                                                                                                                                                                                                                                                                                                                                                                                      thrombosis; contraceptive; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0127607.
99US-0127636.
99US-0127728.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-MAR-2000; 2000WO-US08621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-MAR-2000; 2000US-0540763
                                                                                                                                                                                            08-FEB-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shimkets RA, Leach M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (CURA-) CURAGEN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-602362/57.
P-PSDB; AAB43161.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W0200058473-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-MAR-1999;
02-APR-1999;
05-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-0CT-2000
                                                                                                                                                                  AAC77370;
                                          253
                                                                                                             RESULT 12
                                                                                                                                                   ŏ
```

```
graft vs host disease, cardiovascular disease, diabetes mellitus, hyperbyroidism, cholesterol ester storage, systemic lupus erythematosus, severe combined immunodeficiency (SCID), AIDS, viral, bacterial or fungal infection, malaria, autoimmune disorders; asthma, allergies, aplastic anaemia, burns, wounds, bons and cartilage damage, nocturnal haemoglobinuria, antiinflammatory disease; to enhance coagulation; to inhibit thrombosis; and as a contraceptive.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-methyl-D-aspartate; receptor; human; NMDA; cation-selective; channel; glutamate; hippocampus; rat; pcDNA1; NMDA receptor; antagonist; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2109 AGGGCTTAGTCCAGTTCCTGGGGTGGGGGCAGGCAGTGCCCTGGCACAGTGCCCAGGGT 2168
                                                                                                                                                                                                                                                                                                                                                                                                                                2049 GCCCCCTCCAGGCTCCAACCCACAGCCTCCCGGGTCGCCACATTGCCCCTCAGC 2108
                                                                                                                                                                                                                                                                                                                                                                                   GCCTCCGGGATGCAGACCAACCCAGCCCCACCCTGCGGGCCCCCCTCGGTGCCCTTGGC 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         197 AGGATGACGCCTTCATCCGGAGGGCGGCCCANGCAAGGGCAAGGAACTGGGGCTGCGGG 256
                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Isolated DNA encoding a human N-methyl-D-aspartate receptor subunit - used as probes in the identification and isolation of nucleic acids encoding related receptor subunits.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product= part of the NMDAR2C receptor subunit
540..551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag= c
/note= "24 bp insertion found in clone NMDA24"
                                                                                                                                                                                                                                                                       DB 21; Length 3174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   insertion found in clone NMDA24"
                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                 Sequence 3174 BP; 737 A; 897 C; 904 G; 620 T; 16 other;
                                                                                                                                                                                                                                                                                                                          :69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human NMDAR2 receptor subunit clone NMDA24 gene.
                                                                                                                                                                                                                                                                                                    2.4;
                                                                                                                                                                                                                                                                    Score 38.2; DI
Pred. No. 2.4;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (SALK ) SALK INST BIOTECHNOLOGY IND ASSOC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2169 CAGGCGCCTGGCCTAGCTGGACATCCA 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     257 CAGTGGCCCTGGGCTTCGAAGATACCGA 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1..822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Liaw CW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= b
/note= "11 bp i
1501..1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAQ79401 standard; cDNA; 3243
                                                                                                                                                                                                                                                                    12.2%;
ilarity 53.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93US-0052449.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94WO-US04387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Daggett LP, Ellis SB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1994-341863/42.
                                                                                                                                                                                                                                                                                           Local Similarity
nes 79; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; AAR66059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -20-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-APR-1993;
```

us-09-750-240-1.rng

```
ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
       The nucleotide sequence of the novel N-methyl-D-aspartate (NMDA)

receptor 2C (NMDAR2C) gene clone NMDA24. This clone covers bases

861-4068 of the complete NMDAR2C gene (AAQ79372) with an insertion of 11

bp between bases 1300-1 and an insertion of 24 bp between bases 2350-1.

The 11 bp insert adds an extra 3 a. to the peptide sequence but causes

a reading frame shift which terminates the peptide at residue 494 of the

NMDAR2C sequence. The NMDA receptor contains two subunits: subunit R1

(AAQ79370) and subunit R2 selected from the subunits 2A (AAQ79375), 2B

(AAQ79377), 2C and 2D (AAQ79378). The receptor forms part of a family of

NMDA receptors which have cation-selective channels and bind quitamate

and NMDA. The NMDAR2C gene was obtained by amplifying cDNA derived from

human brain tissues with primers corresponding to sequences in the rat

NMDAR2A receptor DNA and using the resultant fragments as probes to

screen a cDNA library derived from human hippocampal RNA. 4 basic clones

were isolated: NMDA21 (AAQ79399), NMDA22 (AAQ79401)

and NMDA26 (AAQ79402). The clones are thought to be splice variants of

each other. Based on the sequence of the 4 clones, a series of variants

(AAQ79403-7) of the NMDAR2C receptor were constructed. The expression of

the genes allows the reconstruction of the NMDA receptor. The complete

the teceptor can be used to identify compounds which bind or are antagonistic
                                                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-methyl-D-aspartate; receptor; human; NMDA; cation-selective; channel; glutamate; hippocampus; rat; pcDNA1; NMDA receptor; antagonist; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2926 AGAGGCCCCCAGGCCCCGGAGAGCCAGGAGCCGTGGCACAGGGTGGAAGGTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73 CAGAAGCGTTCGCGGCGCCCTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCACCCTGCGGGCCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                 13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                         Length 3243;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= b
/note= "11 bp insertion found in this clone"
1604..1605
                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                              Sequence 3243 BP; 540 A; 1115 C; 1024 G; 564 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                        12.2%; Score 38.2; DB 15;
46.0%; Pred. No. 2.5;
ive 0; Mismatches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= a
/product= NMDA22 variant NMDAR2C
1034..1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2686 CAGGCGGGCCGGTGCACCCAGCGGGCAGCGAGCTG 2651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              receptor subunit clone NMDA22.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers 3..1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAQ79400 standard; cDNA; 3698 BP
                                                                                                                                                                                                                                                                                                     to the human NMDA receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-JUL-1995 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                     Matches 127; Conservative
                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human NMDAR2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAQ79400;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
AAQ79400/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
```

```
The increating sequence of the movel of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3261 TGCTGCCAGGCGGGGGCCCCTGCCTGCTCGCCTCCTGGCAGGCCTCCCGGTAGATCGGC 3202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
/*tag= c
/note= "15 bp deletion of NMDAR2C sequence between
these bases"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCAGGATGACGCCTTCATCCGGAGGGCGCCCCANGCAAGGCCAAGGAACTGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Isolated DNA encoding a human N-methyl-D-aspartate receptor subunit - used as probes in the identification and isolation of nucleic acids encoding related receptor subunits.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The nucleotide sequence of the novel N-methyl-D-aspartate (NMDA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12.2%; Score 38.2; DB 15; Length 3698; 46.0%; Pred. No. 2.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 3698 BP; 610 A; 1280 C; 1164 G; 644 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3141 cagecegecegerecacceaecegecaeceaecre 3106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (SALK ) SALK INST BIOTECHNOLOGY IND ASSOC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ပ်
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 11; Page 99-104; 156pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Liaw CW,
                                                                                                                                                                                                                                                                                                                                                                                               94WO-US04387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93US-0052449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to the human NMDA receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 127; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Daggett LP, Ellis SB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1994-341863/42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAR66058
                                                                                                                                                                                                                                                                                                                                                                                          20-APR-1994;
                                                                                                                                                                                                      WO9424284-A.
                                                                                                                                                                                                                                                                                                27-0CT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193
```

```
The nucleotide sequence of the novel N-methyl-D-aspartate (NWDA)

receptor 2C (NWDAR2C) gene clone NWDAR2C-delta15-delta51. This clone
contains bases 1-1959, 1975-2350 and 2402-4068 of the complete NWDAR2C
sequence (AAQ79372). The variant differsifrom the full length sequence by
a 15 bp deletion of bases 1960-74 and a 51 bp deletion of bases
2351-24401. A series of variants (AAQ79403-7) of the NWDAR2C receptor
were constructed, by recombination, based on the sequence of the 4 basic
clones: NWDA21 (AAQ79399), NWDA22 (AAQ79400), NWDA24 (AAQ79401) and
NWDA22 (AAQ79377), and subunit R2 selected from the subunits 2A (AAQ79375), and subunit R2 selected from the subunits 2A (AAQ79375), and LAAQ79378). The receptor forms part of a family of
NWDA receptors which have cation-selective channels and bind glutamate
and NWDA receptor. The complete receptor can be used to identify compounds
which bind or are antagonistic to the human NWDA receptor.
                                                                                                                                                          N-methyl-D-aspartate; receptor; human; NMDA; cation-selective; channel; glutamate; hippocampus; rat; pcDNAl; NMDA receptor; antagonist; ds.
                                                                                                                                                                                                                                                       /*tag= a
/product= NMDAR2C-delta15-delta51 receptor subunit
1959..1960
                                                                                                                                                                                                                                                                                                                                                                                    /*tag= c
/note= "51 bp deletion of NMDAR2C sequence between
these bases"
                                                                                                                                                                                                                                                                                                                                   /note= "15 bp deletion of NWDAR2C sequence between these bases"
                                                                                                                            Human NMDAR2 receptor subunit clone NMDAR2C-delta15-delta51 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isolated DNA encoding a human N-methyl-D-aspartate receptor subunit - used as probes in the identification and isolation of nucleic acids encoding related receptor subunits.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4274 BP; 713 A; 1462 C; 1331 G; 768 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SALK ) SALK INST BIOTECHNOLOGY IND ASSOC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 11; Page 99-104; 156pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ľ
                                                                                                                                                                                                                                        Location/Qualifiers
189..3833
                              AAQ79407 standard; cDNA; 4274 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Liaw CW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94WO-US04387.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93US-0052449
                                                                                                                                                                                                                                                                                                                                                                      2335..2336
                                                                                          06-JUL-1995 (first entry)
                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ellis SB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1994-341863/42.
P-PSDB; AAR66065.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-APR-1994;
                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-APR-1993;
                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Daggett LP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9424284-A
                                                            AAQ79407;
RESULT 15
                                                                                                                                                                                                                                        Key
                AAQ79407,
```

```
3685 AGAGGCCCCCAGGAGAGCCAGGAGGCGTGGCTGGCACAGGGTGAAGGTGAGGA 3626
                                                                                       73 CAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCCGCTATATG 132
                                                                                                                       133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCAGCCCTGCGGGCCCCCTCGGTGCCCC 192
                                                                                                                                                                                               193 TGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCANGCAAGGCCAAGGAACTGGGGCTG 252
                                                                                                                                                                                                                                                                                              3445 CAGGGGGGGCGGTCACCCAGGGGGGGGAGCTG 3410
                                                                                                                                                                                                                                                                    253 CGGCCAGTGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                        Search completed: February 28, 2003, 23:38:23 Job time: 77.0389 secs
                                                                                                                                                                                                                         q
                                                     δλ
                                                                                     qq
                                                                                                                        ò
                                                                                                                                                        g
                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                  οy
```

; 0

13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72

δy

Query Match
12.2%; Score 38.2; DB 15; Length 4274;
Best Local Similarity 46.0%; Pred. No. 2.6;
Matches 127; Conservative 0; Mismatches 149; Indels 0;

	,						
					•		
	*;	,					
	*			y•.			
						,	
•							
			÷				
				<u> </u>			
							:
							4

```
February 28, 2003, 21:13:01; Search time 539.139 Seconds (without alignments) 16949.756 Million cell updates/sec
                                                                                                                                                                                                                                                     US-09-750-240-1
314
1 atgtcatggtttagtggcct.....acaccggcgggaccgctgaa 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4109280
GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                           2054640 seqs, 14551402878 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9b_pi:*
9b_pi:*
9b_pi:*
9b_pi:*
9b_sy:*
9b_sy:*
9b_vi:*
em_bi:*
em_bi:*
em_nu:*
em_on:*
em_on:*
em_on:*
em_pi:*
em_pi:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_ba:*
gb_htg:*
gb_in:*
gb_om:*
gb_ov:*
gb_pat:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                     Run on:
```

Pred. No. is the number of results predicted by chance to have a

Score Match Length DB ID 313 99.7 314 6 AR174471 313 99.7 314 6 AX189757	295.2 94.0 3549 6 AR174473 295.2 94.0 3549 6 AX189761 295.2 94.0 3552 6 AX189766 295.2 94.0 3582 6 AX189768 295.2 94.0 5877 9 AB007882 295.2 94.0 205248 2 AC117498 293.6 93.5 193283 2 AC121447	29.2 93.0 6463 9 AF250226 AF250226 HOM 283.2 29.2 171945 2 AC025525 HOM 283.2 20.2 171945 2 AC025527 AC02552 HOM 227.4 72.4 4046 4 DOGADENCYC M94968 Canism 227.4 72.4 4046 6 I29958 I29958 Seque 199.2 63.4 5841 6 AX305965 AC074028 AX305965 Seq 199.2 63.4 5841 10 MUSADCYC AC074028 AC07678 AC074028 AC0	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	40.8 13.0 15/28.2 2 AC128294 40.8 13.0 169915 2 AC120440 40.6 12.9 155679 2 AC120273 40.4 12.9 8113 14 HSBBLCP4A 40.4 12.9 103190 5 AY016020 40.4 12.9 135301 14 BHYLCGEN 40.4 12.9 135301 14 BHYLCGEN	
295.2 5 295.2 6 295.2 7 295.2 9 295.2 10 283.2 11 283.3 12 227.4 14 199.2 15 199.2 16 199.2 17 198.2 19 196.6 20 196.6 21 186.2 21 186.2	282 2223 2223 2233 1286 1366 1366 1366 1366 1366 1366 1366 13	5 1 2	444 444444 .	444444	ARESULT 1 ARIJ4471 LOCUS DEFINITION Sequence 1 fr ACCESSION ARIJ4471 G ACCESSION ARIJ4471.1 G KEYWORDS SOURCE ONGANISM UNROWN. UNCLOSASIEGE I (bases 1 t Unclassified. Unclassified. I (bases 1 t AUTHORS Hammond, H. Kir TITLE Gene therapy JOURNAL Betent: US 63 FERATURES

2

```
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX189761.1
                                                                                                                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                              669
                                                                                                                                                                                    Unknown
                                                                                                                                                                                              Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                        301
                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                          ACCESSION
                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                     RESULT 3
AR174473
                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
AX189761
                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                                                                                                                                                              ò
               qq
                                  δy
                                                     g
                                                                       ò
                                                                                        pp
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                               ö
                                                                                                                                                                                                                                                                                                                                    08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                  Vertebrata; Euteleostomi;
                                                                                                                             180
                                                                                                                                                                                            240
                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                GAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCG 300
                                                                                                                                                                                                                                        GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                 9
                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                   GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                           CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                       CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                              Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Eutele Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. I (bases 1 to 314)
Hammond, H.K. and Gao, M.
Gene therapy for congestive heart failure
Patent: WO 0148164-A 1 05-JUL-2001;
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (US)
                                                                                                                                                                                                                                                                                                                                    PAT
                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 314;
                                             Length 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                               Indels
                                                                                                                                                                                                                                                                                                                                   linear
                                        DB 6;
7.3e-60;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 313; DB 6; I
Pred. No. 7.3e-60;
                                                                                                                                                                                                                                                                                                                                    DNA
                  ¥
                                          Query Match 99.7%; Score 313; DE Best Local Similarity 100.0%; Pred. No. 7.3 Matches 314; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     47
                                                                                                                                                                                                                                                                                                                               314 bp
Sequence 1 from Patent W00148164.
AX189757
AX189757.1 GI:15143133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9606"
98 c 108 g
       /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99.7%; Scur
100.0%; Prev
0; }
                108
                  O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100.
Matches 314; Conservative
                 86
                                                                                                                                                                                                                                                                   GCGGGACCGCTGAA 314
                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                60 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09
                                                                                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
source
                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                    61
                                                                                                                                                       121
                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                RESULT 2
AX189757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                  g
                                                                                                                                                                                                           8
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                   g
                                                                                ò
                                                                                                g
                                                                                                                   ŏ
                                                                                                                                                       õ
                                                                                                                                                                      g
                                                                                                                                                                                         ò
                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
ö
                                                                                                                                                                                                                                     PAT 17-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT 08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 GAACTGGGGCTGCGGGCAGTGGCCTTCGAAGATACCGAAGTGACAACGACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 GAACGCAATGGGCAGAGGCTTCGCGGCGCGCGCACTCGGGCAGGTGGTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 GAACTGGGGGTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACGCAATGGGCAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post, S.R. and Gao, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6; Length 3549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 295.2; DB 6;
Pred. No. 4.8e-56;
0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 3549)
Hammond, H.Kirk., Insel, P.A., Ping, P., Post
Gene therapy for congestive heart failure
Patent: US 5306830-A 5 23-OCT-2001;
Location/Qualifiers
1. 3549
                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        764
                                                                                                                                                                                                                                 AR174473
Squence 5 from patent US 6306830.
AR174473
AR174473.1 GI:17914793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 5 from Patent WO0148164.
AX189761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1061 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GI:15143135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 94.0%;
Best Local Similarity 97.1%;
Matches 300; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1025 c
                                                                                                                                    GCGGGACCGCTGAA 314
                                                                                                                   GCGGGACCGCTGAA 314
```

m

QQ

à

g ò g ŏ 요 ò g φ q

à

```
08-AUG-2001
                                                                                                                                                240
                                         180
                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 CCCGGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCACCCCAGCGGGCCCC
                                                                                                           181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCAAGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAATGGAAGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGGCCCC
                                                                                              CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ATGTCATGGTTTAGTGGCCTCCTGGTCCTTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 3582;
                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (ns)
                                                                                                                                                                                                                                                                                                                                                             synthetic construct.
synthetic construct
artificial sequences.
1 (bases 1 to 3582)
Hammond, H.K. and Gao, M.
Gene therapy for congestive heart failure patent: WO 0148164-A 12 05-JUL-2001;
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 4.8e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   construct'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94.0%; Score 295.2; 97.1%; Pred. No. 4.8
                                                                                                                                                                                                                                                                                         3582 bp
Sequence 12 from Patent W00148164.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="synthetic c
/db_xref="taxon:32630"
/note="Modified AC-VI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                      AX189768.1 GI:15143140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1036 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                     301 GCGGGACCG 309
                                                                                                                                                                                                                              301 GGCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGGGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCGGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Sim
Matches 300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  322
                                                                                             181
                                                                                                                                                                                                                                                                    RESULT 6
AX189768
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                              g
                                                                                                                  q
                                                                                                                                                                        QQ
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                  δ
                                                                                             ò
                                                                                                                                                Qγ
                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAT 08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 3552)
Hammond, H.K. and Gao, M.
Gene therapy for congestive heart failure
Patent: WO 0148164-A 10 05-JUL-2001;
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (US)
                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                        241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACG 300
                                                                                                                                                                                                                                                                     61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAAAAGAGCTTGGGGT
                                                                                                                                                                                                                                                                                                                                                                           181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCGANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                1 ATGTCAFGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAAACAGGAAAAACAGCCTGGGGT
                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                             Length 3549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 3552;
                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
1 (bases 1 to 3549)

Hammond, H.K. and Gao, M.
Gene therapy for congestive heart failure
Patent: WO 0148164-A 5 05-JUL-2001;
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6;
                                                                                                                                                             Score 295.2; DB 6;
Pred. No. 4.8e-56;
0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 4.8e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                       ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        761 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94.0%; Score 295.2; 97.1%; Pred. No. 4.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 10 from Patent W00148164.
                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
1025 c 1061 g 764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1068 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AX189766.1 GI:15143139
                                                                                                                                                             94.0%;
97.1%;
                                                                                                                                                                         Best Local Similarity 97.1
Matches 300; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 300; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human.
                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
AX189766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                  ORIGIN
```

ŏ g ò

Gaps

ö

Mon Mar

```
/tissue_type="brain"
/clone_lib="pBluescriptII SK plus"
/note="This sequence was obtained by subcloning of the DNA
/fragments derived from two cDNA clones (1 - 1352 was
derived from pg00161 and 1353 - 5877 was derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGPPRCPWQDDAFIERRGGPGKGKELGLRANGLGFEDTENT MAGNICALESTER
RECKRELOVPCSKGFRALGLRANGLGFEDTENT MAGNICALGATER
RECKRELOVPCSKGFRALGLENIYORYFFOMNOSSITILAMAULVILAFULLAFHAAP
RESCHRELOVPCSKGFRALGENIYORYFFOMNOSSITILAMAULVILAFULLAFHAAP
PRSPSAGLWCPYFFYTALPILIPIRNRAAVISGLGLSTHILIAMQLINGGARIAND
PRSPSAGLWCPYFYYAYTILDFIRNRAAVISGLGLSTHILIAMQLINGGARILILSVLD
GANVLLELCTUNVIGTCHYPAEVSORQAFOGFRGYTOARLHILOHENROGERILLSVLD
GANVLLARGHOLARKITOANHENYTANGHTANTILAMAHACYENGYOMEIRAISLVRE
VTGYNVNMRYGIHSGRYNGGVLGLRKWQFDVWSNDYTLANHMEAGGRAGFIHITRATI
GYLNGDFERSFALLAFGQHTEFFILLIFENTRANGHTANTILAMAULWEGGRAGFRHITRATI
DOLINGWANDRAFSRFRINGGRENATILERHIFFILLIFENTRANGHTANTILAMAULWEGGRAGFRHITRATI
DOLINGWANDRAFSRFRINGRANGTHOSSKRINRGTODALNFEDEVDEFISRALIDARST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (06-OCT-1997) Osamu Ohara, Kazusa DNA Research Institute,
Laboratory of DNA Technology; Yana 1532-3, Kisarazu, Chiba
292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp, Tel:+81-438-52-3913,
Fax:+81-438-52-3914)
On May 9, 2002 this sequence version replaced gi:2887418.
Sequence updated (05-Jan-1998).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="CRRTAGGTARTRGLGGPRDGRPAGRSPRGRRGGGPGQARSRAGS NMSWFSGLLVPRVDERKTAWGERNGQKRSRRRGTRAGGFCTPRYMSCLRDAEPPSPTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LMLGIYASIFLLLITYLICAVYSCGSLFPKALQRLSRSIVRSRAHSTAVGIFSVLLV
FTSAIANMYFIGNMLLSLLASSVFLHISSIGKLAMIFVLGLIYLVLLLLGPPATIFDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MFASIANFSEFYVELEANNEGVECLRLLNEIIADFDEIISEERFROLEKIKTIGSTYM
AASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQMKIGLNMGPVVAGV
IGARKPQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECRGVVKVKGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YDLLIGVHGLASSNETFDGLDCPAAGRVALKYMTPVILLVFALALYLHAQQVESTARL
DFLWKLQATGEKEEMEELQAYNRRLIHNILPKDVAAHFLARERRNDELYYQSCECVAV
                                                                                                                                                                                                                                                                                                                                                Ishikawa,K., Nagase,T., Nakajima,D., Seki,N., Ohira,M., Miyajima,N., Tanaka,A., Kotani,H., Nomura,N. and Ohara,O. Prediction of the coding sequences of unidentified human genes. VIII. 78 new cDNA clones from brain which code for large proteins in vitro
                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                Homo sapiens male brain cDNA to mRNA, clone_lib:pBluescriptII SK plus clone:hh01205s1.
                                    linear
                  5877 bp mRNA Homo sapiens KIAA0422 mRNA, partial cds. AB007882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="hh01205s1"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /protein_1d="BAA24852.2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="GI:20521045"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA Res. 4 (5), 307-313 (1997) 98116655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1782 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .5877
/gene="KIAA0422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="KIAA0422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GEMTTYFLNGGPSS'
                                                                                                                      AB007882.2 GI:20521044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 5877)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1612 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .3484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .5877
                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                 KIAA0422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ohara, O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9455477
                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
AB007882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
```

Query Match

```
Homosaplens and the control of the c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AC117498 205248 bp DNA linear HTG 31-JUL-2002
Homo sapiens clone RP11-422021, *** SEQUENCING IN PROGRESS ***, 20
                                                                                                                                                                                                                                                       CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACTGGGGCTGCGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACGCAATGGGCAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                     CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                            137 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 196
                                                                                                 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                   Indels
   Pred. No. 4.4e-56;
0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC117498.4 GI:22002346
HTG; HTGS_PHASE1.
97.18;
   Best Local Similarity 97.1
Matches 300; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unordered pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGGGACG 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 8
AC117498/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                        셤
                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                PRI 10-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94.08; Score 295.2; DB 9; Length 5877;
```

AUTHORS JOURNAL

COMMENT

REFERENCE TITLE

```
Db 168819 GGCGGGACG 168811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301 GCGGGACCG 309
                                                                                                                                                                            115534
115634
139874
139974
175365
     35864
35964
49815
49915
64386
64486
81101
81201
97967
                                                                                                                                                                                                                                                                                                                                                                          51253 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC021647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                300;
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 9
AC021647/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a 'working draft' sequence. It currently consists of 20 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                    Direct Submission
Submitted (10-APR-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
3 (Dases 1 to 205248)
Sodergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H., Sutton, A., Svatek, A., Tabor, P., Tamerisa, A., Tamerisa, K., Tang, H., Tansey, J., Taylor, Taylor, T., Telfrod, B., Thomas, N., Thomas, S., Usmani, K., Vasquez, L., Vera, V., Villalon, D., Vinson, R., Wang, S., Ward-Moore, S., Warren, R., Washington, C., Watlington, S., Williams, G., Williamson, A., Wleczyk, R., Wooden, S., Worley, K., Weinstock, G. and Gibbs, R.
                                                                                                                                                                                                                                                                                                                                  Submitted (31-JUL-2002) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA On Jul 29, 2002 this sequence version replaced gi:21956504.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s: contig of 2025 bp in length

s: gap of unknown length

s: contig of 2312 bp in length

s: contig of 2096 bp in length

s: contig of 2096 bp in length

s: gap of unknown length

s: contig of 2415 bp in length

s: gap of unknown length

s: contig of 2045 bp in length

s: contig of 2045 bp in length

s: contig of 2817 bp in length

s: contig of 2817 bp in length

s: gap of unknown length

s: contig of 3292 bp in length

s: contig of 3292 bp in length

s: contig of 2325 bp in length

s: contig of 2235 bp in length

s: contig of 2235 bp in length

s: contig of 2231 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bp in length
                                                                                                                                                                                                                                                                                                                                                                                                        Genter: Baylor College of Medicine
Center: Baylor College of Medicine
Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Drafting Center Code: WUGSC
Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
of 4730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of 5588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center project name: HEAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        contig
                                                                                                                                                        Unpublished
2 (bases 1 to 205248)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2025:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6633:
6733:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9148:
9248:
11635:
11735:
13780:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20189:
23014:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23114:25345:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25445:
31033:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20089
                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                              Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2026
2126
4438
4538
6634
6734
6734
9149
9249
111636
111736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13881
16698
16798
20090
20190
23015
23115
25346
31034
31134
                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
```

```
ACO21647 193283 bp DNA linear HTG 09-MAY-2002
Homo sapiens chromosome 12 clone RP11-455122, WORKING DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db 169119 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 169060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db 168999 CCCCGCTATATGAGCTGCCTCCGGGATGCAGCCCACCCCAGCCCCCTGCGGGCCC 168940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db 168939 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCAGGCAAGGGCAAG 168880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 193283)

Muzny, D.M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C., Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T., Barbaria, J., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D., Bouck, J., Bowie, S., Brieva, M., Brown, E., Brown, M., Bryant, N.P., Buhay, C., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carrer, M., Cavazos, S.R., Chacko, J., Chavez, D., Chen, G., Chen, R., Chowdhry, I., Christopoulos, C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 169059 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 169000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 295.2; DB 2; Length 205248; Pred. No. 2.6e-56; 0; Mismatches 9; Indels 0;
35963: gap of unknown length 49814: contig of 13851 bp in length 49814: gap of unknown length 64885: contig of 14471 bp in 64485: gap of unknown length 81100: contig of 16615 bp in length 81200: gap of unknown length 97966: contig of 16766 bp in length 98066: gap of unknown length 115533: gap of unknown length 115633: gap of unknown length 139873: contig of 24240 bp in length 139873: gap of unknown length 17564: gap of unknown length 17564: contig of 35391 bp in length 17564: gap of unknown length 17564: gap of unknown length 17564: contig of 29784 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6006 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC021647.18 GI:20335444
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP.
Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48345 g 51200 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .205248
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE, 8 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="RP11-42202]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94.0%;
97.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48444 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
```

```
q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R., David, R.L., Davis, C., Davy-Carroll, L., Dederich, D.A., Delaney, K.R., Delaney, K.R., Delaney, K.T., Delaney, K.T., Delaney, K.T., Delaney, K.J., Delaney, K.J., Delaney, K.J., Douthwaite, J.J., Douthwaite, J.J., Douthwaite, J.J., Douthwaite, J.J., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Escotto, M., Falls, T., Ferraguto, D., Flagg, M., Ford, J., Foster, P., Frantz, P., Garisi, A., Garner, T., Garza, N., Gill, R., Gao, J., Garcia, W., Haves, A., Hamen, J., Hawes, A., Harnandez, O., Hodgson, A., Hogues, M., Holloway, C., Halliton, B., Hernandez, O., Hodgson, A., Hogues, M., Holloway, C., Hollins, B., Homari, F., Howard, S., Huber, J., Hulye, S., Hume, J., Jackson, E.E., Jacobson, B., Jia, Y., Johnson, R., Jolives, S., Joudah, S., Katlovis, J., Kureshi, A., Luder, M., Holloway, C., Hollins, B., Lu, J., Lu, X., Lucier, A., Lude, C., Lidu, J., Liu, M., Loulseged, H., Lozacoo, B., Jia, Y., Lucier, A., Lucier, R., Luna, R., Marinez, E., Katlyson, E., Kelly, S., Khan, U., King, L., Korvah, J., Kovar, C., Lu, J., Lu, X., Lucier, A., Lucier, M., Martindale, A., Martinez, E., Martin, M., Mapua, P., Martin, R., Martindale, A., Martinez, E., Martin, M., Martinez, E., Martin, M., Mapua, P., Martin, R., Martin, M., Mapua, P., Martin, S., Moser, M., Notelow, P., Novelow, S., Oguh, M., Okwuonu, G., Peters, L., Pickens, R., Pace, A., Paton, B., Put, L., Quiles, M., Rolis, R., Pace, A., Paton, B., Thomas, S., Savery, G., Scherer, S., Soutk, A., Tabor, P., Tamerisa, A., Tamerisa, A., Tang, H., Tansey, J., Taylor, C., Taylor, P., Tamerisa, A., Tamerisa, M., Tang, H., Tansey, J., Taylor, C., Taylor, P., Tamerisa, A., Tamerisa, M., Tang, W., Walliams, G., Walliams, D., Walliams, C., Walliams, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a 'working draft' sequence. It currently consists of 8 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Morley, KfC.

Direct Shbmission
Submitted (19-JAN-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza,—Houston, TX 77030, USA
3 (bases 1 to 193283)
Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
Submitted (09-MAY-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing vector: M13;
Sequencing vector: M13;
Sequencing vector: M13;
Chemistry: Dye-primer Bodipy: 2% of reads
Chemistry: Dye-terminator Blig Dye: 98% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 219180 bases at least Q40
Consensus quality: 234400 bases at least Q20
Consensus quality: 243367 bases at least Q20
Estimated insert size: 209025; sum-of-contigs estimation
Quality coverage: 10x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center code: BCM
Web site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center project name: HAAF
Center clone name: RP11-455122
Center Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 to 193283)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
```

```
PRI 15-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
[ pases 1 to 6463]
Wicker,R., Catalan,A.G., Cailleux,A., Starenki,D., Stengel,D.,
Sarasin,A. and Suarez,H.G.
Cloning and expression of human adenylyl cyclase type VI in normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCACCCCTGCGGGCCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGCCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 GAACTGGGGCCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens adenylyl cyclase type VI mRNA, complete cds. AF250226.1 GI:9049782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 193283;
                                                                                                 2133: contig of 2133 bp in length 2233: gap of unknown length 5400: contig of 3167 bp in length 5800: gap of unknown length 7889: contig of 2389 bp in length 7889: contig of 2389 bp in length 35756: gap of unknown length 65517: contig of 23661 bp in length 65717: gap of unknown length 65717: gap of unknown length 65717: gap of unknown length 65718: gap of unknown length 104448: contig of 38731 bp in length 104548: gap of unknown length
                                                                                                                                                                                                                                                                                                                                     145966: contig of 41418 bp in length 146066: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10; Indels
                                                                                                                                                                                                                                                                                                                                                                       146066: gap of unknown length 193283: contig of 47217 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93.5%; Score 293.6; DB 2; 96.8%; Pred. No. 6.1e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49273 a 48888 c 46863 g 47544 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="RP11-455122"
                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /chromosome="12'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 299; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74471 GGCGGGACG 74463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                             5401
5501
7890
7990
35657
35757
65618
                                                                                                                                                                                                                                                                                                                            104449
104549
145967
146067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
AF250226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
```

Mon Mar

```
241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACGACCACG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig of 7532 bp in 1 gap of unknown length contig of 6824 bp in 1 gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The sequence of Homo sapiens clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mammalia; Eutheria; Primates;
1 (bases 1 to 171945)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                   AC025557.4 GI:7657832
HTG; HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6925: 6
7025: 6
11773:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19405:
19505:
26329:
26429:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                            995 GGCGGGACG 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished
                                                                                                        301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1863
1963
3737
3837
6926
7026
111774
111874
19406
26330
                                                                                                                                                                                                                                      RESULT 11
AC025557/c
LOCUS
                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                    g
                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  / LEGAR STATE OF THE STATE OF T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PPATIFDNYDLLLGVHGLASSNETFDGLDCPAAGRVALKYMTPVILLVFALALYLHAQ
OVESTARLDFLWKLQATGEKEEMEELQAYNRRLLHNILPKDVAAHFLARERRNDELYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QSCECVAVMFASIANFSEFYVELEANNEGVECLRLLNETIADFDEIISEERFRQLEKI
KTIGSTYMAASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQMKIGLN
MGPVVAGVIGARKPQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECR
                                                                                                2 (bases 1 to 6463)
Wicker, R., Gascon Catalan, A., Cailleux, A.-F., Starenki, D.,
Stengel, D., Sarasin, A. and Suarez, H.G.
Direct Suprission
Submitted (28-MAR-2000) Lab Etude des Relations - Instabilite
genetique at Cancer UPR 7169, Institut de Recherches sur le Cancer
CNRS IRR 1221, 7 rue Guy Moquet, Villejuif 94801, France
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 6463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11; Indels
                     Biochim. Biophys. Acta 1493 (1-2), 279-283 (2000) 20435313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="adenylyl cyclase type VI"
/protein_id="AAF82478.1"
/db_xref="GI:9049783"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 292; DB 9;
Pred. No. 2.3e-55;
0; Mismatches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1533 t
                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="thyroid"
complement(19. .447)
/rpt_family="Alu"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GVVKVKGKGEMTTYFLNGGPSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /rpt_type=dispersed
695. .4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /rpt_type=dispersed
469. .561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1871 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          469. .561
/rpt_family="MIR"
                                                                                                                                                                                                                                                                                                                                                                                                                           /map="12q12-q13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 93.0%;
Best Local Similarity 96.4%;
Matches 298; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1795 c
                                                                                                                                                                                                                                                                                                                      1. .6463
thyroid tissues
                                                                            10978539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               875
                                                                       PUBMED
                                                    MEDLINE
                                                                                                        REFERENCE
                                                                                                                              AUTHORS
                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
AC025557 171945 bp DNA linear HTG 07-JUL-2000 Homo sapiens chromosome 12 clone RP11-579D7, WORKING DRAFT SEQUENCE, 17 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
935 GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGGG 994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Waterston, B.H.:
Direct, Submission
Submitted (10-MAR-2000) Genome Sequencing Center, Washington
University School of Meddcine, 4444 Forest Park Parkway, St.
MO 63108...ISA...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MO 63108 USA
On Apr 27, 2000 this sequence version replaced gi:7574970.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOTE: This is a 'working draft' sequence. It currently consists of 17 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequencing vector: M13; 100%
Sequencing vector: M13; 100%
Sequencing vector: plasmid; 0%
Sequencing vector: plasmid; 0%
Chemistry: Dye-primer ET; 100% of reads
Chemistry: Dye-terminator Big Dye; 0% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 167959 bases at least 030
Consensus quality: 168924 bases at least 020
Insert size: 177000; agarose-fp
Insert size: 177005; sum-of-contigs
Quality coverage: 5.62 in 020 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center: Washington University Genome Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1862: contig of 1862 bp in length
1962: gap of unknown length
3736: contig of 1774 bp in length
3836: gap of unknown length
6925: contig of 3089 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of unknown length contig of 4748 bp in length gap of unknown length
```

```
DOGADENCYC 4046 bp mRNA linear MAM 27-APR-1993
Canis familiaris adenylyl cyclase type VI mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

1 (bases 1 to 4046)

Katsushika,S., Chen,L., Kawabe,J., Nilakantan,R., Halnon,N.J., Homcy,C.J. and Ishikawa,Y.

Cloning and characterization of a sixth adenyly—eyelage isoform: types V and VI constitute a subgroup within the marmerial adenyly)
                                                                                                                   79500 GAACGCAATGGGCAGAAGCGTTCGCGGCGCGCGCGCACTCGGGCAGGTGGCTTCTGCACG 79441
                                                                                                                                                                          CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                           CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                    GAACTGGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCCACTGGGCCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCCGCTATATGAGCTGCCTCCGGGATGCAGACCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGCGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131 ATGTCGTGGTTTAGTGGCCTCCTGGTCCCAAAGTGGATGAACGGAAGACAGCCTGGGGT 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        248 CCCCGCTATATGAGCTGCCTCCGGGATGCGCACCCCCCAGTCCCACCCTGCGGGCTCCC 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAACGCAATGGCCAGAAGCGTTCGCGGCGCCCTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proc. Natl. Acad. Sci. U.S.A. 89 (18), 8774-47
92409599
                                                                                                                                                                                                                                                                                                                                                                                                                     M94968.1 GI:163896
aden/Lyl cyclase type VI.
canis familiaris cardiac muscle cDNA to mRNA.
Canis familiaris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 227.4; DB Pred. No. 6.2e-41 0; Mismatches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72.4%;
ilarity 89.5%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   family
                                                                                                                                                                                                                                                                                                     79261 GGCGGGACG 79253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                            GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                             LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                  RESULT 12
DOGADENCYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                            61
                                                                                                     121
                                                                                                                                                           181
                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      308
                                                                                                                                                                                        79381
                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                       ga
                                                                                                                             g
                                                                                                                                                                                      g
                                                                                                                                                                                                                                              Q
                                                                                                     ò
                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                            à
                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 171945;
                                                                      f unknown length
g of 9898 bp in length
f unknown length
g of 9920 bp in length
f unknown length
g of 12235 bp in length
                                                                                                                                                                                                     110984: gap of unknown length
126977: contig of 15993 bp in length
127077: gap of unknown length
146137: contig of 19660 bp in length
146237: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1601 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 283.2; DB 2; Length
Pred. No. 1.3e-53;
0; Mismatches 9; Indels
                                                        of 10142 bp in length
                                                                                                                                                                         of 12679 bp in length
                                                                                                                                                                                      unknown length
of 13262 bp in length
of 7165 bp in length
unknown length
of 8454 bp in length
                                            unknown length
                                                                                                                                                           unknown length
                                                                                                                                                                                                                                                                                                                                                                                                         1963. 3736
/note-"assembly_name:Contig6"
3837. 6925
/note-"assembly_name:Contig6"
7026. 11773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97623. .110884
/note="assembly_name:Contig18"
110985. .126977
/note="assembly_name:Contig19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    127078. 146137
/note="assembly_name:Contig20"
146238. 171945
/note="assembly_name:Contig21"
/42962 c 41369 g 42818 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11874. .19405
/note="assembly_name:Contig9"
19506. .26329
/note="assembly_name:Contig10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26430. .33594 - 26430. .33594 /note="assembly_name:Contigll" 33695. .42148 /note="assembly_name:Contigl2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62489. .72408
/note="assembly_name:Contig15"
72509. .84743
/note="assembly_name:Contig16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84844. .97522
/note="assembly_name:Contig17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12249. .52390
/note="assembly_name:Contig13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52491. 62388
/note="assembly_name:Contig14
clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                         1. .1862
/note="assembly_name:Contig5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1026. .11773
note="assembly_name:Contig8"
                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="12"
                                                                                                                                                                                                                                                                                                       Socation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                           'clone="RP11-579D7"
                                                                                     contig
gap of
                                                                                                                 contig
                                                                                                                                              contig
gap of
                                                                                                                                                                                      97622: gap of
10884: contig
                               contig
gap of
                                                                                                                                                                          contig
                                                                         gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vector_side:right"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vector_side:left"
                 gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone_end:T7
                               42148:
                                                                                     62388:
62488:
                                                        52390:
                                                                                                                                                           84843:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 299; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
 26430
33595
33595
42149
42249
42249
52391
52491
72409
72409
72509
84744
                                                                                                                                                                                     97523
97623
110885
110985
126978
127078
146138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43195
                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local
                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                       FEATURES
```

isoform:

7;

Gaps

э; Э

241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAG 286

ŏ

us-09-750-240-1.rge

Ĥ

```
AVOGGALAAN HESPAGLUCTY FVUTTILLE TRIREAGUEGEST LHILLEAWOL

NSSPPELMKOLGANVULELCTRAIGVTHYPAEVSOROAF CETTET LHILLEAWOL

OSERLLISVLPOHVAMEMEDINTK KEDMEHKI VIOKHDNVSILFADIEGFTSLASO

CTAGELVMTLIRELFAREDKIADENHCLRIKITIGDCYYCVSGLEBRADHAHCCVEMGY

DMIEA ISLUREVTGVINGDYEVEDGRGGERNAYLKEQCIEFTLIGASORREERAMLAKL

ORTRANSMEGLAREWYDERAFSTRIKENTAYLKEQCIEFTLIGASORREERAMLAKL

ORTRANSMEGLAREWYDERAFSTRIKENTAYLKEQCIEFTLIGASORREERAMLAKL

CRAIDARSIDOLRKDHVRRFLLTFOREDEKKYSRKVDPRFGAYVACALLVFCFTOF

ICLINFPYSTLIGITYAL TELLLLYTULCAVCSCGSFPRAGNITYBERVHST

AVGIFSYLLVEISAIANFTORHTPIRTCARAMLATSSIGKLAMTPILGFTYLVLLLLGPPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product-"adenylyl cyclase type VI"
/protein_id-"AAA37174.1"
/protein_id-"AAA37774.1"
/db_xref-"ed::191691"
/translation-"ASWFSGLLVPKYDERKTAMGERNGOKRPRHANKASGFCAPRYMS
CLKNAEPPSPTPAAHTRCPWQDEAFIRRAGPGRGVELGLRSVALGFDDTEVTTPMGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AIFDNYDLLLGVHGLASSNETFDGLDCPAVGRVALKYMTPVILLVFALALYLHAQQVE
STARLDFLWKLQATGEKEEMEELQAYNRRLLHNILPKDVAAHFLARERRNDELYYQSC
ECVAVWFASIANFSEFYVELEANNEGVECLRLLNEIIADFDEIISEERFRQLEKIKTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EVAPDTSPRSGPSCWHRLVQVFQSKQFRSAKLERLYQRYFFQMNQSSLTLLMAVLVLL
MAVLLTFHAAPAQPQPAYVALLTCASVLFVVLMVVCNRHSFRQDSMWVVSYVVLGTLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ROD 27-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSTYMAASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQMKIGLNMGP
VVAGVIGARKPQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECRGVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. I (bases 1 to 5841)
Yoshimura, M. and Cooper, D. M. Cloning and expression of a Ca(2+)-inhibitable adenylyl cyclase from NCB-20 cells
Proc. Natl. Acad. Sci. U.S.A. 89 (15), 6716-6720 (1992)
92357702
1379717
                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                      240
                                                                                 61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                          Gaps
                                                                                                                                                               273 ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCAGGAGGCGGGCCCGGGCAGGGTGTG
                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                        121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGGCCCC
                                                                                                                                                                                                                                             181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG
                        .
.
                                                                                                                                                                                                                                                                                                                                                                                241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAAC 293
                                                                                                                                                                                                                                                                                                                                                                                                      MUSADCYC 5841 bp mRNA linear Mouse adenylyl cyclase type VI mRNA, complete cds.
                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M93422
M93422.1 GI:191690
adenylyl cyclase; adenylyl cyclase type VI.
Mus musculus cDNA to mRNA.
Pred. No. 1.1e-34;
                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Mus musculus"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _number="4.6.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .5841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cell_line="NCB-20"
96. .3593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
    82.3%;
                        241; Conservative
    Best Local Similarity
Matches 241; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
MUSADCYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                                  셤
                                                                                                                                         ŏ
                                                                                                                                                                               셤
                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ij
                                                                                                                      PAT 06-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAT 11-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 GAACGCAAATGGGCAGAAGCGTTCGCGGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       248 CCCGGTATATGAGCTGCCTCCGGGATGCGCACCCCCCAGTCCCACCCCTGCGGGCTCCC 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                           1 (bases 1 to 4046)
Ishkawa, 2 (baracterization of a cardiac adenylyl cyclase
Patent: US 5578481-A 1 26-NOV-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ishikawa,K., Asai,S., Takahashi,Y., Nagata,T. and Ishii,Y. Method for examining ischemic conditions
Patent: WO 0188188-A 716 22-NOV-2001;
School Juridical Person Nihon University (JP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 5841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 4046;
                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
  368 GAGCTGGGGGCGGGGCGCTGGCCTTCGAGGACACTGAGG 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               368 GAGCTGGGGCTGGGGCGGGGCTTCGAGACACTGAGG 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 GAACTGGGGCTGCGGCAGTGGCCCTGGGCTTCGAAGATACCGAAG 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 227.4; DB 6
Pred. No. 6.2e-41;
0; Mismatches 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63.4%; Score 199.2;
                                                                                                                                                                                                                                                                                                                                                                                                                       844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AX305965 5841 bp
Sequence 716 from Patent WO0188188.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1396
                                                                                                                  129958 4046 bp
Sequence 1 from patent US 5578481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .5841
/organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /db_xref="taxon:10090"
1558 c 1673 g 1
                                                                                                                                                                                                                                                                                                                                                                                            /organism="unknown"
1202 c 1257 q
                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AX305965.1 GI:17645322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              72.4%;
89.5%;
                                                                                                                                                                               GI:1820749
                                                                                                                                                                                                                                                                                                                                                                              1. .4046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                           Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                     743 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                               129958.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AX305965
                                                                                                                                                                                                                      Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1214
                                                                                                                                                                                                                                           Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT .
                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                         ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                             RESULT 13
I29958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AX305965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                    LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                    g
```

qq

ò g δ

ð

q

δ g à g

```
1;
                                                                                                                     3; Gaps
                                                           1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                              Query Match 63.4%; Score 199.2; DB 10; Length 5841; Best Local Similarity 82.3%; Pred. No. 1.1e-34; Matches 241; Conservative 0; Mismatches 49; Indels 3;
                                                                                                                                                                                 1396 t
KVKGKGEMTTYFLNGGPSS"
1214 a 1558 c 1673 g
       BASE COUNT
ORIGIN
                                                                                                                                                                                241
                                                                                                                   δý
                                                                          g
                                                                                                     g
                                                                                                                                    g
                                                                                                                                                    ŏ
                                                                                                                                                                qq
                                                                                                                                                                                δ
                                                            ò
                                                                                         οy
```

Search completed: March 1, 2003, 02:23:27 Job time: 710.139 secs

sedineuroe sedineuroe

Sequence

OM nucleic

ou:

Sequence:

Title:

Searched:

Database

о В

Result

```
APPLICANT: Hammond, H. Kirk
APPLICANT: Insel, Paul A.
APPLICANT: Ping, Pethei
APPLICANT: Post, Steven R.
APPLICANT: Goo, Meihua
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE
TITLE OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
         US-08-480-474-53
US-08-940-086A-53
US-08-940-035A-53
US-08-948-797-53
US-08-11-193A-49
US-08-486-737-44-9
US-08-940-086A-49
US-08-940-035A-49
US-08-940-035A-49
US-08-940-035A-49
US-08-940-035A-49
US-08-948-797-49
US-08-488-47
US-08-488-797-49
US-08-488-77-49
US-08-488-77-49
US-08-488-77-49
US-08-488-77-49
US-08-488-77-49
US-08-488-77-49
US-08-488-77-49
US-08-488-77-49
                                                                                                                                                                                                                     US-08-940-035A-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENY APPLICATION DATA:
APPLICATION NUMBER: US/09/008,097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Dylan, Tyler M
REGISTRATION NUMBER: 37,612
REGERENCE/DOCKET NUMBER: 22000-20567.21
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-813-5600
                                                                                                                                                                                                                                                           ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: MORRISON & FOERSTER STREET: 755 PAGE MILL ROAD CITY: PALO ALTO
                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/09008097 Patent No. 6306830 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: Coding Sequence LOCATION: 1...312 OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTAL. ....
ZIP: 94304-1018
COMPUTER REALABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H: 314 base pairs
nucleic acid
DEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 650-494-0792
TELEX: 706141
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: 650-6792
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                           US-09-008-097-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
 \circ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE:
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Appli
Sequence 1, Appli
Sequence 11, Appli
Sequence 12, Appli
Sequence 12, Appli
Sequence 1, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 44, Appli
Sequence 43, Appli
Sequence 63, Appli
Sequence 63, Appli
Sequence 63, Appli
Sequence 63, Appli
                                                                                                    (without alignments)
12520.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Appli
Sequence 5, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                     February 28, 2003, 22:03:11; Search time 7.69093 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Description
                                                                                                                                                               1 atgtcatggtttagtggcct.....acaccggcgggaccgctgaa
                                                                                                                                                                                                                                                                                                                                                                                      1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/1/ina/fB_COMB.seq:*
5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
            GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-940-035A-43
US-08-935-105A-43
US-09-648-797-43
US-08-231-193A-53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-231-193A-44
US-08-486-273A-44
US-08-940-086A-44
US-08-940-035A-44
US-08-935-105A-44
US-08-935-105A-44
US-08-935-105A-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-474-076-1
US-09-474-076-1
US-08-726-214-11
US-08-726-214-11
US-09-404-650-12
US-07-793-961A-1
US-08-240-351-1
US-08-28-069-5
US-08-928-069-5
US-08-928-069-5
US-08-928-069-5
                                                                                                                                                                                                                                                       Potal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-231-193A-43
US-08-486-273A-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-480-474-43
US-08-940-086A-43
                                                                                                                                                                                                                                441362 segs, 153338381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                             using sw model
                                                                                                                                                                                           IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                            Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match Length DB
                                                                                                                                         US-09-750-240-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nucleic search,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                      Perfect score:
```

Gaps

ö

Indels

.4e-66; les 9; DB 4;

Length 3549;

9

```
APPLICANT: Tomlinson, James E.
APPLICANT: COR Therapeutics, Inc.
TITLE OF INVENTION: CLOOKING AND CHARACTERIZATION OF A HUMAN ADENYLXL
TITLE OF INVENTION: CYCLASE
FILE REFERENCE: 44481-5028-01-US
CURRENT APPLICATION NUMBER: US/09/474,076
CURRENT APPLICATION NUMBER: PT/VS98/13694
PRIOR FILING DATE: 1999-12-12
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR PRILCATION NUMBER: 06/070,904
PRIOR FILING DATE: 1997-07-01
PRIOR SELICATION NUMBER: 06/070,904
                                                                                                                                                                                                                                                                                                                                               61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                     121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACAACGACGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                     1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                           1 ATGTCATGGATTTAGTGGCCTCCTGGTCCTAAAGTGGATGAATGGAACGAAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 295.2; DB 4;
Pred. No. 3.5e-66;
0; Mismatches 9;
                                                                                                                                                                                           Score 295.2;
Pred. No. 3.46
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: human type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Sequence 1, Application US/09474076
; Patent No. 6465237
                                                                                         ; NAME/KEY: Coding Sequence; LOCATION: 1...3501
; OTHER INFORMATION:
US-09-008-097-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94.0%;
97.1%;
                                                                                                                                                                                           Query Match 94.0%;
Best Local Similarity 97.1%;
Matches 300; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 97.1
Matches 300; Conservative
                   TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; LOCATION: (145)..(3648)
US-09-474-076-1
                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 GCCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-474-076-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 1
LENGTH: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
                                                                           ö
                                                                                                                                                                                                               CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                 GAACTGGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                           61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                   CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                   Gaps
                                                                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                           ö
                                     Length 314;
                                                                           Indels
                                   99.7%; Score 313; DB 4; 100.0%; Pred. No. 7.1e-71; Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Hammond, H. Kirk
APPLICANT: Insel, Paul A.
APPLICANT: Ping, Peipei
APPLICANT: Post, Steven R.
APPLICANT: Gao, Meihua
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22000-20567.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/09/008,097
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: MORRISON & FOERSTER
STREET: 755 PAGE MILL ROAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-008-097-5; Sequence 5, Application US/09008097; Patent No. 6306830; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Dylan, Tyler M
REGISTRATION UNUMBER: 2200
REFERENCE/DOCKET NUMBER: 2200
TELECOMMUNICATION INFORMATION:
TELEFANE 650-813-5600
TELEFAX: 706141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 GCGGGACCGCTGAA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGGACCGCTGAA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM:
                                     Query Match
Best Local Similarity
Matches 314; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: PALO ALTO
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
US-09-008-097-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
                                                                                                                                                   g
                                                                                                                                                                                         δ
                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
```

ö

Gaps

ö

Indels

ï

```
180
                                                                                                                                                                                                     248 CCCGGTATATGAGGTGCCTCCGGGATGCGCACCCCCCAGTCCCACCCCTGCGGGCTCC 307
                                                                                                                                                                                                                                                                             308 CCTCGGTGCCCCTGGCAGGATGAGGCCTTCATCCGGAGAGGCGGCCCGGGCAAGGGCACG 367
                                                                                                           61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                          181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                  121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGGCCCC
 ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;
%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4046;
 27; Indels
                                                                                                                                                                                                                                                                                                                                  241 GAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAG 286
                                                                                                                                                                                                                                                                                                                                                    368 GAGCTGGGGCTGCGGGCGGTGGCCCTGGGCTTCGAGGACACTGAGG 413
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/08240357
Patent No. 5578481
GENERAL INFORMATION:
APPLICANT: ISHIKAWA YOSHIHIRO
TITLE OF INVENTION: Clouling and Characterization of a TITLE OF INVENTION: Cardiac Adenylyl Cyclase NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: American Cyanamid Company
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: PAPLICATION NUMBER: US/08/240,357 FILING DATE: 10-MAY-1994 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 227.4; DB 1;
Pred. No. 4.9e-49;
 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31,705-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: GOZGON, Alan M.
REGISTRATION NUMBER: 30,637
REFERENCE/DOCKET NUMBER: 31,7
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-831-3244
INFORMATION: COR SEQ. ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          One Cyanamid Plaza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72.4%;
89.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 4046 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 256; Conservative
 Matches 256; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
131..3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07470-8426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   usa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: 11
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wayne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: NE
                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-240-357-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-240-357-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                      g
                                                                                                                                          q
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                           ŏ
                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                        Qγ
                                                                       205 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 264
                                                                                                                           121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                               265 CCCGGTATATGAGCTGCCTCCGGGATGCAGACCACCCAGCCCCACCCCTGCGGGGCCCC 324
                                                                                                                                                                                                     CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                       145 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAATGGAAAAAAGCGCTGGGGT 204
                                                                                                                                                                                                                                                                             GAACTGGGGGTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACGACGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ALTICANT: Yoshihiro Ishikawa
TITLE OF INVENTION: Cloning and Character-
TITLE OF INVENTION: Lization of a Cardiac Adenylyl Cyclase;
NUMBER OF SEQUENCES: 1
CORRESPONDENCES: ADAM M. Gordon
ADDRESSEE: Alam M. Gordon
ADDRESSEE: Alam M. Gordon
STREET: 1937 West Main Street,
STREET: P0.0. Box 60
CITY: Stamford
STATE: Connection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 227.4; DB 1;
Pred. No. 4.9e-49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC AT
OPERATING SYSTEM: MS-DOS
SOFTWARE: ASCII from DW4
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/793,961A
FILING DATE: 19911118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 31,705
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203 321 2719
TELEFAX: 203 321 2971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/07793961A
Patent No. 534521
GENERAL INFORMATION:
APPLICANT: YOShihiro Ishikawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4046 base pairs listed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY AGENT INFORMATION:
NAME: Gordon, Alan M.
REGISTRATION NUMBER: 30,637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         72.4%;
89.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS LENGTH: 4046 base pair TYPE: NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 19911118
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Connecticut
USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                               301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                   445 GGCGGGACG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-07-793-961A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-07-793-961A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                           241
                                                      61
                                                                                                                                                                                                     181
                                                                                                                                                                                                                                       325
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 4
                                                     à
                                                                                       a
                                                                                                                           ò
                                                                                                                                                           Ω
                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                 ŏ
```

ij

```
Sequence 12, Application US/09404650
Patent No. 6309858
GENERAL INFORMATION:
APPLICANT: Dietrich, Paul S.
APPLICANT: Dietrich, Joseph G.
TITLE OF INVENTION: T-TYPE CALCIUM CHANNEL VARIANTS; COMPOSITIONS THEREOF;
TITLE OF INVENTION: AND USES
TILE REFERENCE: R0043B-REG sequence listing
CURRENT APPLICATION NUMBER: US/09/404,650
CURRENT FILING DATE: 1999-09-23
SOFTWARE: Patentin Ver: 2.0
SEQ ID NOS: 12
SOFTWARE: Patentin Ver: 2.0
                                                                                                                                                                                                                                                                 233 ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCAGGAGGGCTGGCCCGGGAAGGGGTGTG 292
                                                        CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             201 TGACGCCTTCATCCGGAGGGCGGCCCANGCAAGGCAAGGAACTGGGGCTGCGGGCAGT 260
     116 GAACGCAATGGACAGAAGCG---CCCACGCCAGGCGACCCGAGCCCGTGGCTTCTGCGCG 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141 CCGGGATGCAGACCACCCAGCCCCACCCTGGGGGCCCCCTCGGTGCCCCTGGCAGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    173 CCCCGCTACATGAGCTGCCTCAAGAATGTGGAGCCACCCAGCCCACTCCTGCAGCTCGC
                                                                                                                                                               CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCANGCAAGGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Yoshihiro Ishikawa
TITLE OF INVENTION: 1zation of a Cardiac Adenylyl Cyclase
TITLE OF INVENTION: 1zation of a Cardiac Adenylyl Cyclase
NUMBER OF SEQUENCES: 1
CORRESPEDINCE ADDRESS:
ADDRESSEE: Alan M. Gordon
ADDRESSEE: American Cyanamid Company
STREET: 1937 West Main Street,
STREET: P.O. Box 60
CITY: Stanford
STATE: Connecticut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 6503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 38.6; DB Pred. No. 0.31; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 1, Application US/07793961A; Patent No. 5334521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12.3%;
55.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261 GGCCCTGGGCTTCG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCGGCGGGTCCG 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 74; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORGANISM: Rattus sp.
                                                                                                                                                                                                                                                                                                                                                                           GCGGGACC 308
                                                                                                                                                                                                                                                                                                                                                                                                                           353 GGGACAGC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-404-650-12/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 8
US-07-793-961A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 6503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-404-650-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                        121
                                                                                                                                                               181
                                                      δ
                                                                                                      g
                                                                                                                                                             ŏ
                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                  pp
                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
131 ATGTCGTGGTTTAGTGGCCTCCTGGTCCCCAAAGTGGATGAACGGAAGACAGCCTGGGGT 190
                                                   GAACGCAATGGGCAGAAGCGTTCGCGGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                           240
                                                                                                                                                                                                                                                                                         GAACGCAATGGGCAGAAGCGTTCGCGGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                       CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCAGCCCCTGCGGGCCCC
                                                                                                                                                                                                                                                              CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 3; Length 4131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Tang, Wel-Jen
APPLICANT: Tang, Wel-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                     241 GAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAG 286
                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: Bateniu Release #1.0, Version #1.30
SOFTWARE: Pateniu Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/726,214
FILING DATE: CONCULTENTLY HETEWITH
CLASSIFICATION WABER: US 60/005,498
FILING APPLICATION WABER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
TELECHMONICATION INFORMATION:
TELECHMONICATION:
TELECHMONICATION INFORMATION:
TELECHMONICATION:
TELECHMONICATION INFORMATION:
TELECHMONICATION:
TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63.1%; Score 198.2; DB 79.9%; Pred. No. 1.2e-41 iive 0; Mismatches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433 CITY: Houston STATE: Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 11, Application US/08726214 Patent No. 6107076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best_Local Similarity 79.9
Matches 246; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: UN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
US-08-726-214-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                    191
                                                                                                                                                       121
                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                               308
                                                                                                                                                                                                                                                                                                                                                                                                                   368
                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                     g
                                                   à
                                                                                                    g
                                                                                                                                                       à
                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
```

; 0

```
90 CCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTGCCTCCGGGATGC 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           462 CCGGGGGTCACGTCAGGCCACCTCCAGCTGCCCCAACCGCTGACATGGCCTCAGTGTCC 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 150 AGAGCCACCCACCCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTT 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  210 CATCCGGAGGGGCGGCCCANGCAAGGGCAAGGAACTGGGGCTGCGGGCAGTGGCCCTGGG 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     57 GGGTGAACGCAATGGGCAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTG 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
5498529-5
;PATENT NO. 5498529
APPLICANT: BERKA, THOMAS R.;FORNWALD, JAMES A.;GORNIAK,
;JOSELINA G.;ROSENBERG, MARTIN.STRICKLER, JAMES E.;TAYLOR, DEAN P.
TITLE OF INVENTION: PROTEIN PROTEASE INHIBITORS FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11.8%; Score 37.2; DB 6; Length 668; 49.4%; Pred. No. 0.49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches 100; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 37.6; DB 1;
Pred. No. 0.52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 9
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/162,506
FILING DATE: 03-DEC-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 894,167
FILING DATE: 03-UIN-1992
APPLICATION NUMBER: 346,119
                                                                                                                          31,705-01
APPLICATION NUMBER: US/08/240,357
FILING DATE: 10-MAY-1994
                                                             Gordon, Alan M.
                                                                                                                 REFERENCE/DOCKET NUMBER: 31
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-831-324
TELEFAX: 201-831-3305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 16-FEB-1989
APPLICATION NUMBER: 897,245
FILING DATE: 18-AUG-1986
                                                                                                                                                                                                                                                                                                                                       DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                              12.0%;
                            CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Gordon, Alan M.
                                                                                                                                                                                                                                                LENGTH: 4046 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     270 CTTCGAAGATACCGAAG 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           282 GGCTGCGCATCCCGGAG 266
                                                                                                                                                                                   TELEFAX: 201-831-3305
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 49.2
Matches 97; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                  REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: CDS
LOCATION: 131..3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
Les 126; Conserv
                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
5498529-5
                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-240-357-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREPTOMYCES
                                                                                                                                                                                                                                                                                                                                                         FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO:5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90 CCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCGGTATATGAGCTGCCTCCGGGATGC 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 462 CCGGGGGTCACGTCAGGCCCCCCCCCCACCGCTGACCACTGCCTCAGTGTCC 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               150 AGAGCCACCCAGCCCACCCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTT 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       402 TCGAAGCCCACGCACCGCAGCCCCAGCTCCGTGCCCTTGCCCGGGCCGCCTCTC 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                210 CATCCGGAGGGCGGCCCANGCAAGGCAAGGAACTGGGGGCTGCGGGCAGTGGCCCTGGG 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08240357
Patent No. 5578481
GENERAL INFORMATION:
APPLICANT: Ishikawa, Yoshihiro
TITLE OF INVENTION: Cloning and Characterization of TITLE OF INVENTION: Cardiac Adenylyl Cyclase NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 12.0%; Score 37.6; DB 1; Best Local Similarity 49.2%; Pred. No. 0.52; Matches 97; Conservative 0; Mismatches 100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       American Cyanamid Company
                                MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC AT
OPERATING SYSTEM: MS-DOS
SOFTWARE: ASCII from DW4
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/793,961A
FILING DATE: 19911118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                 31,705
                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 4046 base pairs listed
TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                                                                                                                                                                                                                       FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: GOTGON, Alan M.
REFISTRATION NUMBER: 30,637
REFERENCE/DOCKET NUMBER: 31,7
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203 321 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: One Cyanamid Plaza
CITY: Wayne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 270 CTTCGAAGATACCGAAG 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           282 GGCTGCGCATCCCGGAG 266
                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 203 321 2971
                 COMPUTER READABLE FORM:
                                                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                            APPLICATION NUMBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: USA
ZIP: 07470-8426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-240-357-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-07-793-961A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
```

g

a ŏ g

δ

g

ŏ

Gaps

ö

Gaps

9

Page

```
272 AGGGCCCGCCTGGCGGGGGGGGGGGGGGGCCGCCCGAGCCCAACCGAGTCCGACCAG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     392 gegecegerecrecaracecerecaacagegececeaagagerreceagerecererere 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      138 CCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCCCCTCGGTGCCCCTGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      272 AGGGCCCGCCTGGCGGGGGGGGGGGGGGGGCCGCCGGGCCCGAGCCCAACCGAGTCCGACCAG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                78 GCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198 GGATGACGCCTTCATCCGGAGGGCGGCCCANGCAAGGGCAAGGAACTGGGGCTGCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 37.2; DB 4; Length 1. Pred. No. 0.55; Mismatches 119; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   212 GTGCCCCTCTGCTCGCCTAGACCTGAGCTCATTAGGCGGCAGCGG 166
                                                                                      212 GIGCCCCCTCTGCTCGGCCTAGACCTGAGCTCATTAGGCGGCAGCGG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  258 AGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGG 304
                                            258 AGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGG 304
                                                                                                                                                                                            Sequence 5, Application US/08828683A
Patent No. 6469144
GENERAL INFORMATION:
APPLICANT: Ashkenazi, Avi J.
TITLE OF INVENTION: Apo-2 LI AND Apo-3 POLYPEPTIDES
NUMBER OF SEQUENCES: 28
CORRESPONDENCE ADDRESS:
ADDRESSE: Genentech, Inc.
STREET: I DNA WAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORDUTER TOWN 1.44 Mb floppy disk COMPUTER: 3.5 inch, 1.44 Mb floppy disk COMPUTER: 18 PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WinPatin (Genetech) CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/828,683A FLILNG DATE: 31-Mar-1997 CLASSIFICATION: cUnknown>
PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/625328 FLILNG DATE: 1-Apr-1996 APPLICATION NUMBER: 08/710802 FLILNG DATE: 23-Sep-1996 ATTONNEY/AGENT INPORMATION: NAME: MASCHAMMANION: REFERENCE/DOCKET NUMBER: 35,600 REFERENCE/DOCKET NUMBER: 91007P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: Linear
SEQUENCE DESCRIPTION: SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                    CITY: South San Francisco
STATE: California
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11.8%; Scu-
47.6%; Pred
0; }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: 650/225-5416
TELEFAX: 650/952-9881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 1438 Base pairs
TYPE: Nucleic Acid
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 94080
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 108; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX:
                                                                                                                                                                              US-08-828-683A-5/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-828-683A-5
                                                                                                                                                           RESULT 12
                                            δy
                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Op
  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                              CAAGGAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGAC 296
                                                                                                                                                                                                     302 GGCGGGGCCCGGTGACCTGAACTGCGCCCCGACGGCCTCCGGAACCCA 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCCCGTCGTGGTTCCGCCTTCAGCCCCGCGCCCGCGCCGCCGCCGCCGTCGAGA 273
117 CACGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGG 176
                           190 CCGTCTGCG-----GACCCCTCACCGAGCCGCGCCCCCCCCCGGCCGCTGCTGC 241
                                                                                                                    138 CCTCCGGGATGCAGAGCCACCCAGCCCCAGCCCTGCGGGCCCCCTCGGTGCCCTGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78 GCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 392 GCGGCCGCTGCTCCATAGCCCTCCGACGGGCGCCCAGGGGGCTTCCCGGCTCCGTGCTCTC 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAGGAACTGGGGCTGCGGGC 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                      177 CCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches 119; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 37.2;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5, Application US/08928069
Patent No. 64621176:
GENERAL INFORMATION:
APPLICANT: Ashkenazi, Avi J.
TITLE OF INVENTION: App-3 POLYPEPTIDE
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Winpatin (Generical)
CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/08/928,069
FILING DATE: 11-Sep-1997
CLASSIFICATION 1435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/026943
FILING DATE: 09/23/1996
ATTORNEY/AGENT INFORMATION:
NAME: MAISCHARD, DIANE L.
REGISTRATION NUMBER: 35,600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-5416
TELEFAX: 650/952-9881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO: 5: SEQUENCE CHARACTERISTICS: LENGTH: 1438 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 47.6
Matches 108; Conservative
                                                                                                                                                                                                                                                                    297 ACCGGCGGGACCGCT 311
                                                                                                                                                                                                                                                                                                                TCCGGCCGCNGCNCT 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: Nucleic Acid
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Linear
                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
US-08-928-069-5/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-928-069-5
                                                                                                                                                                            237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                         a
                                                                                                                                                                         à
                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                    ð
                                                                                      ô
                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

ó

Gaps

ó

```
APPLICANT: Daggett, Lorrie P.
APPLICANT: Ellis, Steven B.
APPLICANT: Liaw, Chinen W.
APPLICANT: Liaw, Chin-chun
APPLICANT: Lu, Chin-chun
TITLE OF INVENTION: HUMAN N-METHYL-D-ASPARTATE RECEPTRO SUBUNITS, DNA
TITLE OF INVENTION: ENCODING SAME AND USES THEREFOR
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESSE:
ADDRESSEE: Brown, Martin, Haller & McClain
STREET: 1660 Union Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2926 AGAGGCCCCCAGGCGCCGGAGAGCCAGGAGCCGTGGCTGTCACAGGGTGGAAGGTGAGGA 2867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73 CAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATAIG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGGGGGCCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193 TGCCAGGATGACGCCTTCATCCGGAGGGGGGGCCCCANGCAAGGGCAAGGAACTGGGGGCTG 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARES PATENTIN Release #10, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/486,273A
FILING DATE: 06-JUN-1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/231,193
FILING DATE: 20-APR-1994
CLASSIFICATION: 435
ATTOMSY/AGENT INFORMATION:
NAME: Seldman, Stephanie
REGISTRATION NUMBER: 33,779
2686 CAGGCGGGCCGGTGCACCCAGCGGGCAGCGGGTG 2651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 36.6; DE
Pred. No. 0.89;
                                                                                                                 Sequence 44, Application US/08486273A Patent No. 5985586 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE DOCKET NUMBER: 63
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-238-0999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; NAME/KEY: Coding Sequence
; LOCATION: 1...3243
US-08-486-273A-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 11.7%;
Best Local Similarity 45.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3243 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 619-238-0062
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 126; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619-238-0062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                                    San Diego
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: U.S.A. ZIP: 92101-2926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                   RESULT 14
US-08-486-273A-44/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE:
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                      HUMAN N-METHYL-D-ASPARTATE RECEPTOR SUBUNITS, NUCLEIC ACIDS ENCODING SAME AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2806 IGCIGCCAGGCGGGGCCCCIGCCTGCTCGCCTCCTGGCAGGCCTCCCGGIAGATCGGC 2747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2746 AAGCACATCGACTGCGCCTGCGCCAAGCGCCTGCAGGCCGAGTGGCCGTCGGGGCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2926 AGAGGCCCCCAGGCGCGGAGGCCAGGAGCCGTGGCTGTCACAGGGTGGAGGTGAGGA 2867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73 CAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGGGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGGCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               193 TGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCCANGCAAGGGCAAGGAACTGGGGCTG 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3243;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches 150;
                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: Brown, Martin, Haller & McClain
STREET: 1660 Union Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGGCAGTGGCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11.7%; Score 36.6;
ilarity 45.7%; Pred. No. 0.4
Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Seidman, Stephanie
REGISTRATION NUMBER: 33,779
REFERENCE/DOCKET NUMBER: 6362-9383
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-238-0999
TELEFAX: 619-238-0062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/231,193A
FILING DATE: 20-APR-1994
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/052,459
FILING DATE: 20-APR-1993
CLASSIFICATION: 536
                                         Sequence 44, Application US/08231193A Patent No. 5849895 GENERAL INFORMATION:
                                                                                                             APPLICANT: Daggett, Lorrie P. APPLICANT: Lils, Steven B. APPLICANT: Liaw, Chen W. APPLICANT: Lu, Chin-Chun TITLE OF INVENTION: HUMAN N-MET TITLE OF INVENTION: SUBUNITS, NUMBER OF SEQUENCES: 63
                                                                                                                                                                                                                                                                                                                                                                                                        ZIE: 92101-2926
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 44: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: Coding Sequence LOCATION: 1...3243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 3243 base pairs
TYPE: nucleic acid
STRANDEDNESS: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 126; Conserva
                                                                                                                                                                                                                                                                                                                      STREET: 1660 Uni
CITY: San Diego
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                              U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: un
MOLECULE TYPE:
                     -08-231-193A-44/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; LOCATION:
US-08-231-193A-44
                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
```

```
Sequence 44, Application US/08480474

Patent No. 6033865

GENERAL INFORMATION:
PAPPLICANT: Blis, Steven B.
APPLICANT: Liaw, Chen W.
APPLICANT: Liaw, Chen W.
APPLICANT: Lu, Chin-chun
TITLE OF INVENTION: PAME AND USES THEREFOR
NUMBER OF SEQUENCES: 54
CORRESPONDENCE ADDRESS:
ADDRESSEE: Brown, Martin, Haller & McClain
STREET: 1660 Union Street
CITY: San Diego
STREET: 050
COUNTRY: U.S.A.
COUNTRY: U.S.A.
ZIP: 92101-2926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2806 TGCTGCCAGGGGGGCCCTGCTGCTCTGGCAGGCCTCCCGGTAGATCGGC 2747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2926 AGAGGCCCCCAGGCGCGGAGAGCCAGGAGCCGTCGCTGTCACAGGGTGGAAGGTGAGGA 2867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73 CAGAAGCGTTCGCGGCGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCACCCTGCGGGCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193 TGGCAGGATGACGCCTTCATCCGGAGGGCGCCCCANGCAAGGGCAAGGAACTGGGGCTG 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 11.7%; Score 36.6; DB 3; Length 3243; Best Local Similarity 45.7%; Pred. No. 0.89; Matches 126; Conservative 0; Mismatches 150; Indels 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER REAABLE FORM:
MEDIUW TYPE: Floppy disk
COMPUTER: THE PC compatible
COMPOTER: THE PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
SOFTWARE: PPLICATION DATE: 05-JUN-1995
TILING DATE: 05-JUN-1995
TLING DATE: 05-JUN-1995
ATTORNEY/AGENT INFORMATION:
NAME: Seidman, Stephanie
REFERENCE/DOCKET NUMBER: 6362-9382B
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION SEQ 1D NO: 44:
SEQUENCE CHARACTERISTICS:
INFORMATION FOR SEQ 1D NO: 44:
                            2686 CAGGCGGGGCGGTGCACCCAGCGGGCAGCGAGCTG 2651
253 CGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ) NAME/KEY: Coding Sequence;
; LOCATION: 1...3243
US-08-480-474-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: nucleic acid
STRANDEDNESS: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: CDNA
                                                                                                              RESULT 15
US-08-480-474-44/C
  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
```

Search completed: March 1, 2003, 04:04:35 Job time : 18.6909 secs

```
(without alignments)
15188.998 Million cell updates/sec
                                                                                                                                                                                                                                                    l atgtcatggtttagtggcct......acaccggcggaccgctgaa 314
                                                                                                                      March 1, 2003, 02:24:48; Search time 12.892 Seconds
GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                             460893 segs, 311809382 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maximum Match 100%
Listing first 45 summaries
                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                             IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
                                                                                                                                                                                                        US-09-750-240-1
314
                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                      Sequence:
                                                                                                                        Run on:
```

1: /cgn2_6/ptodata/2/pubpna/USO7_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
3: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/USO6_PUBCOMB.seq:*
5: /cgn2_6/ptodata/2/pubpna/USO7_NEW_PUB.seq:*
6: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
7: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
8: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
9: /cgn2_6/ptodata/2/pubpna/USO9_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/USO9_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/USO9_PUBCOMB.seq:*
12: /cgn2_6/ptodata/2/pubpna/USO9_PUBCOMB.seq:*
13: /cgn2_6/ptodata/2/pubpna/USO0_NEW_PUB.seq:*
14: /cgn2_6/ptodata/2/pubpna/USO0_NEW_PUB.seq:*
14: /cgn2_6/ptodata/2/pubpna/USO0_NEW_PUB.seq:*
14: /cgn2_6/ptodata/2/pubpna/USO0_NEW_PUB.seq:*
14: /cgn2_6/ptodata/2/pubpna/USO0_NEW_PUB.seq:*
14: /cgn2_6/ptodata/2/pubpna/USO0_NEW_PUB.seq:*

Published_Applications_NA:*

Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		æ				
Result		Query				
No.	Score	Match	Match Length DB	DB	ID	Description
1	313	7.66	314	10	US-09-750-240-1	Sequence 1, Appli
8	295.2	94.0	3549	10	US-09-750-240-5	
m	295.2	94.0	3552	10	US-09-750-240-10	
4	295.2	94.0	3582	10	US-09-750-240-12	
2	295.2	94.0	4942	σ	US-10-201-000-1	9
9	163.4	52.0	358	6	US-09-933-797-165	Sequence 165, App
7	94.6	30.1	220	10	US-09-728-445-487	Sequence 487, App
œ ن	38.6	12.3	6503	10	US-09-935-541-12	Sequence 12, Appl
ი ე	37.2	11.8	1438	σ	US-10-081-280-5	Sequence 5. Appli
c 10	37.2	11.8	1438	σ	US-10-112-793-5	
c 11	37.2	11.8	1438	6	US-10-112-193-5	Sequence 5, Appli
c 12	37.2	11.8	1438	10	US-09-884-733-5	. v
c 13	37.2	11.8	1438	10	US-09-993-234-5	2
c 14	36.6	11.7	3243	σ	US-09-945-901-44	4
c 15	36.6	11.7	3243	6	US-10-007-747-44	
c 16	36.6	11.7	3243	σ	US-10-038-937-44	
c 17	36.6	11.7	3698	σ	US-09-945-901-43	
c 18	36.6	11.7	3698	δ	US-10-007-747-43	43,
c 19	36.6	11.7	3698	6	US-10-038-937-43	43,

Seguence 53, Appl	Sequence 53, Appl		4	Sequence 49, Appl	4	47,	47,	47,	5, A	Sequence 5, Appli	ູ່	51,	51,	Sequence 51, Appl	4	Sequence 45, Appl	45,	29,	Sequence 16, Appl	16,	5, A	16	> 157	57, 1	Sequence 157, App
US-09-945-901-53	US-10-007-747-53	US-10-038-937-53	US-09-945-901-49	US-10-007-747-49	US-10-038-937-49	US-09-945-901-47	US-10-007-747-47	US-10-038-937-47	US-09-945-901-5	US-10-007-747-5	US-10-038-937-5	US-09-945-901-51	US-10-007-747-51	US-10-038-937-51	US-09-945-901-45	US-10-007-747-45	US-10-038-937-45	US-10-004-717-59	US-09-799-462A-16	US-10-125-767-16	US-09-815-981-5	US-09-836-911A-16	US-09-764-847-1577	US-10-174-590-157	US-10-176-758-157
4002 9	002 9	002 9	017 9	017 9	017 9)53 9)53 9	53 9	6 890	6 89(6 890	077 9	9 770	077 9	4092 9	92 9	4092 9	485 9	22118 9	22118 9	22118 9	2118 9	0797 10	2883 9	883 9
7 4(7 4(7	7	7 4(7 4(7 4(7 4(7	7 4(_	_	7	7	7 4(7	7	7	9	5 223	5 22]	5 22]	5 22]	3 107	2 28	2 28
11.	11.	11.	11	11.	11.	11.	11.	11	11.	11.	11.	11.	11.	11.	11	11	11	Ξ.	11.	11.	11.	11.	11.	11.	11.
36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.4	36	36	36	36	35.6	35.2	35.2
20	21	22	23	24	25	56	27	28	59	30	31	32	33	34	32	36	37	38	36	40	41	42	43	44	45
υ	O	υ	O	υ	O	Ö	υ	Ö	O	ပ	U	υ	O	υ	υ	ט	O	ပ	ပ	O	Ö	O	O	υ	O

ALIGNMENTS

```
REGULT 1

US-09-750-240-1

US-09-750-240-1

US-09-750-240-1

US-09-750-240-1

Sequence 1, Application US/09750240

Patent No. US202020103147A1

APPLICANT: Hammon, H. K.

APPLICANT: Ding, P.

APPLICANT: Ding, P.

APPLICANT: Ensel, P. A.

APPLICANT: Ensel, P. A.

APPLICANT: Plost, S. R.

APPLICANT: Plost, S. R.

APPLICANT: Gao, M.

TITLE OF INVENTION: FAILING: PLOST OF CONCESTIVE HEART

FILE REFERENCE: 220002056723

CURRENT APPLICATION UNMBER: US 09/472,667

PRIOR APPLICATION NUMBER: US 09/409,750,240

CURRENT FILING DATE: 1999-10-16

PRIOR PLING DATE: 1999-10-16

PRIOR PLING DATE: 1999-00-05

PRIOR PLING DATE: 1997-00-05

PRIOR PLING DATE: 1997-00-05

PRIOR PLING DATE: 1997-00-05

NUMBER OF SEQ ID NOS: 13

SOSTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 1

LENGTH: 314

TYPE: DAA

GRANISM: Homo sapiens

FRATURE:

NUMBER KEXTURE:

NUMBER KEXTURE:

NUMBER KEXTURE:

NUMBER KEXTURE:

NUMBER KEXTURE:

NUMBER (MINGOM: NUMBER: US 09/78; Score 313; DB 10; Indels 0; Indels 0; Indels 0; Matches 314; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGAAGGGGAAAACAGCCTGGGGT 60

ò

```
121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                      61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCANGCAAGGGCAAG
                           Sequence 10, Application US/09750240

patent No. US20020103147A1

GENERAL INPORMATION:

APPLICANT: Hammon, H. K.

APPLICANT: Hammon, H. K.

APPLICANT: Ping, P.

APPLICANT: Gao, M.

TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART

TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART

TITLE OF INVENTION: GOOD 505723

CURRENT APPLICATION NUMBER: US/09/750,240

CURRENT APPLICATION NUMBER: US 09/472,667

PRIOR APPLICATION NUMBER: US 09/008,097

PRIOR FILING DATE: 1999-12-27

PRIOR FILING DATE: 1998-01-16

PRIOR FILING DATE: 1998-01-16

PRIOR FILING DATE: 1997-06-16

PRIOR FILING DATE: 1997-06-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 295.2; DB 1
Pred. No. 1.6e-68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94.0%;
97.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 97.1
Matches 300; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens
                                                                                                                                                                                              GCGGGACCG 309
                                                                                                                                                                                                                                              301 GCCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-750-240-10
                                                                                                                                               241
                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                            g
                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . <sup>Q</sup>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D
                                               음
                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 GAACGCAATGGGCAGAAGCGTTCGCGGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                           120
                                                                                                 181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                              241 GAACTGGGGCTGCGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCG 300
                                                                                                                                                                        121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
  DB 10; Length 3549,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: HORALION.
APPLICANT: Insel, P. A.
APPLICANT: Insel, P. A.
APPLICANT: Disel, P. A.
APPLICANT: Poig, P.
APPLICANT: Poig, P.
APPLICANT: Gao, M.
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART
TITLE OF INVENTION: FAILURE
FILE REFERENCE: 220002056723
CURRENT APPLICATION NUMBER: US/09/750,240
CURRENT APPLICATION NUMBER: US 09/472,667
PRIOR FILING DATE: 1999-12-27
PRIOR PELLING DATE: 1999-12-27
PRIOR FILING DATE: 1999-01-16
PRIOR FILING DATE: 1997-09-05
PRIOR APPLICATION NUMBER: US 08/924,757
PRIOR APPLICATION NUMBER: US 08/924,757
PRIOR APPLICATION NUMBER: US 08/708,661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 94.0%; Score 295.2; DB 1
Best Local Similarity 97.1%; Pred. No. 1.6e-68;
Matches 300; Conservative 0; Mismatches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 5, Application US/09750240 Patent No. US20020103147A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGGACCGCTGAA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGGACCGCTGAA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                        ð
                                                                                                                      셤
                                                                                                                                                                     õ
                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
```

ő

Gaps

ő

Length 3552;

DB 10;

```
61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      265 CCCCGCTATATGAGCTGCCTCCGGGATGCAGACCACCCAGCCCCACCCCTGCGGGGCCCC 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACGACACCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  205 GAACGCAATGGGCAGAAGCGTTCGCGGCCCCGTGGCATCGGGCAGGTGGCTTCTGCACG 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF A HUMAN ADENYLYL TITLE OF INVENTION: CYCLASE
FILE REFERENCE: 44441-5028-01-05
CURRENT APPLICATION NUMBER: US/10/201,000
CURRENT FILING DATE: 2002-07-24
PRIOR APPLICATION NUMBER: US/09/474,076
PRIOR FILING DATE: 1999-12-12
PRIOR APPLICATION NUMBER: CYC/US98/13694
PRIOR FILING DATE: 1999-0-01
PRIOR FILING DATE: 1999-0-01
PRIOR FILING DATE: 1999-0-01
PRIOR APPLICATION NUMBER: 08,000,004
PRIOR FILING DATE: 1997-07-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 165, Application US/09933797
; Sequence 165, Application US/09933797
; Patent No. US20020155119A1
; GENERAL INFORMATION:
; APPLICANT: Robert A. Sikes et al.
; TITLE OF INVENTION: Isolation and Use of Fetal Urogenital; TITLE OF INVENTION: Sinus Expressed Sequences
; TITLE OF INVENTION: Sinus Expressed Sequences
; TILE REFERENCE: 9901-007-999
; CURRENT APPLICATION NUMBER: US/09/933,797
; CURRENT FILING DATE: 2001-08-2
; PRIOR APPLICATION NUMBER: US/09/482,933
; PRIOR PLIING DATE: 1999-05/14
; PRIOR PLIING DATE: 1999-05/14
; PRIOR FILING DATE: 1998-05-14
; NUMBER OF SEQ ID NOS: 811
; SEQ ID NO 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match 94.0%; Score 295.2; DB 9; Best Local Similarity 97.1%; Pred. No. 1.7e-68; Matches 300; Conservative 0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: human type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; LOCATION: (145)..(3648)
US-10-201-000-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        445 GGCGGGACG 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-933-797-165
                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 4942
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82 GAACGCAATGGGCAGAAGCGTTCGCGCGCGCGTGGCACTCGGGCAGGTGTTCTGCACC 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        142 CCCGGTATATGAGCTGCCTCCGGGATGCAGACCACCCAGCCCCACCCTGCGGGGCCCC 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGCCCCANGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 GAACTGGGGCTGCGGCCAGTGGCCCTTGGAAGATACCGAAGTGACAACGACACCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 10; Length 3582;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Hammon, H. K.
APPLICANT: Insel, P. A.
APPLICANT: Insel, P. A.
APPLICANT: Dost, S. R.
APPLICANT: Gao, M.
TILLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART
TILLE OF INVENTION: FAILURE
FILE REFERENCE: 220002056723
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US 09/472,667
PRIOR APPLICATION NUMBER: US 09/008,097
PRIOR APPLICATION NUMBER: US 09/008,097
PRIOR FILING DATE: 1999-01-16
PRIOR APPLICATION NUMBER: US 08/924,757
PRIOR APPLICATION NUMBER: US 08/938
PRIOR PILING DATE: 1997-06-16
PRIOR FILING DATE: 1997-06-16
PRIOR FILING DATE: 1996-09-05
NUMBER OF SEQ ID NOS: 13
COFTWARE: FASTEED FOR WINDOWS VERSION 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 94.0%; Score 295.2; DB 10; Best Local Similarity 97.1%; Pred. No. 1.6e-68; Matches 300; Conservative 0; Mismatches 9;
                                                                        5.09-750-240-12
Sequence 12, Application US/09750240
Patent No. US20020103147A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 1, Application US/10201000
; Publication No. US20020187540A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER INFORMATION: Modified AC-VI US-09-750-240-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Tomlinson, James E. APPLICANT: COR Therapeutics, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322 GCCGGGACG 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 5
US-10-201-000-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID NO 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ολ
```

ó

Length 4942;

180

```
TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 261 GGCCCTGGGCTTCG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53 GCGGGCGGGTCCG 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 94080
                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 74; Conserv
                                                                                                                                                                                                                       ; ORGANISM: Rattus sp
US-09-935-541-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-081-280-5/c
                                                                                                                                                              SEQ ID NO 12
LENGTH: 6503
                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                          CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                    240 CCTCGCTACATGAGCTGCCTCAAGAATGCGGAGCCACCCAGCCCCACTCCTGCAGCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCGCTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                  123 ATGTCATGGTTTAGTGGCCTCCTGGTTCCCAAAGTGGATGAACGGAAAACAGCTTGGGGGG 182
                                                                                                                                Gaps
                                                                                                                                                                1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 487, Application US/09728445
Patent No. US20020102543A1
GENERAL INFORMATION:
APPLICANT: Friedrich, Glenn
APPLICANT: Zambrowicz, Brian
APPLICANT: Sands, Arthur T.
TITLE OF INVENTION: No. US20020102543A1e1 Mutated Mammalian Cells and
TITLE OF INVENTION: Animals
FILE REFERENCE: LEX-0102-USA
CURRENT APPLICATION NUMBER: US/09/728,445
CURRENT FILING DATE: 2000-11-30
PRIOR PILING DATE: 1999-12-01
                                                                                                                                                                                                                                                                                                                                                                                   181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGG 236
                                                                                                                                                                                                                                                                                                                                                                                                        ACTCGGTGCCCCTSGCAGGATGAAGCCTTCATCAGGAGGGGGGCCGGGCAGGGG 355
                                                                                                                              3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3,
                                                                                      Score 163.4; DB 9; Length 358;
Pred. No. 3.7e-34;
2; Mismatches 35; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 30.1%; Score 94.6; DB 10; Length 220; Best Local Similarity 84.4%; Pred. No. 3.6e-16; Matches 119; Conservative 0; Mismatches 19; Indels 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 891
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 487
LENGTH: 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 12, Application US/09935541
Patent No. US20020150911A1
GENERAL INFORMATION:
APPLICANT: Dietrich, Paul S.
APPLICANT: McGivern, Joseph G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 CCCCGCTATATGAGCTGCCTC 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184 CCTCGCTACATGAGCTGCCTC 204
                                                                                          52.0%;
83.1%;
                                                                                      Query Match
Best Local Similarity 83.1'
Matches 196; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Mus musculus
                ; TYPE: DNA
; ORGANISM: Murine
US-09-933-797-165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-935-541-12/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
US-09-728-445-487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-728-445-487
LENGIH: 358
                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
                                                                                                                                                                  ò
                                                                                                                                                                                                    a
                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
```

```
ö
TITLE OF INVENTION: T-TYPE CALCIUM CHANNEL VARIANTS; COMPOSITIONS THEREOF; TITLE OF INVENTION: AND USES
FILE REFERENCE: R0043B-REG sequence listing
CURRENT APPLICATION NUMBER: US/09/935,541
CURRENT FILING DATE: 2001-08-23
PRIOR APPLICATION NUMBER: 09/404,650
PRIOR FILING DATE: 1999-09-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             141 CCGGGATGCAGACCACCCAGCCCCAGCCCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGA 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201 TGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAGGAACTGGGGGCTGCGGGCAGT 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 6503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ashkenazi, Avi J.
TILE OF INVENTION: Apo-2 LI AND Apo-3 POLYPEPTIDES
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genethech, Inc.
STREET: 460 Point San Bruno Blvd
CITY: South San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER TEACHABLE FORM:
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COFFWARE: WINDEATH (Genentech)
COFFWARE: WINDEATH (GENENTECH)
FILING DATE: 21-Feb-2002
CLASSIFICATION NUMBER: US/08/829,270
FILING DATE: 31-Feb-2002
CLASSIFICATION DATA:
APPLICATION OF BENEVALION:
TELECOMMUNICATION:
TELECOMMUNICATION:
TELECOMMUNICATION:
THE COMPANIES AND APPLICATION:
TELECOMMUNICATION:
THE COMPANIES AND APPLICATION:
THE COMPANIES AND APPLICATION OF APPLICATION:
THE COMPANIES AND APPLICATION OF APPLICATION AND APP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 38.6; DB 10;
Pred. No. 0.31;
0; Mismatches 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 5, Application US/10081280 Patent No. US20020165157A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1438 base pairs
TYPE: Nucleic Acid
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: 415/225-5416
TELEFAX: 415/952-9881
TELEX: 910/371-7168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12.3%;
55.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: California
                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 12
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    74; Conservative
```

ô

```
198 GGATGACGCCTTCATCCGGAGGGCGGCCCANGCAAGGGCAAGGAACTGGGGGCTGCGGGC 257
                                                                                                                                                                                                                                                                         272 AGGCCCCGCCTGGCGGGCGGGGGGGGGGGCCCCGAGCCCAACCGAGTCCGACCAG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            392 GCGGCCGCTGCTCCATAGCCCTCCGACGGCGCCCCAGGGGCTTCCCGGCTCCGTGCTCTC 333
                                             78 GCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                          392 GCGGCCGCTGCTCCATAGCCCTCCGACGGCGCCCCAGGGGCTTCCCGGCTCCGTGCTCTC 333
                                                                                                                                     138 CCTCCGGGATGCAGAGCCACCCAGCCCACCCTGCGGGCCCCCTCGGTGCCCCTGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78 GCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138 CCTCCGGGGATGCAGAGCCACCCACCCCTGCGGGCCCCCCTCGGTGCCCCTGGCA 197
  Gaps
                                                                                                                                                                  332 TGCCCGTCGTGGTTCCGCCTTCAGCCCCGCGCCCGCAGGGCCCCGCCCCCCCGCGCCGTCGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 119; Indels
  0; Mismatches 119; Indels
                                                                                                                                                                                                                                                                                                                      258 AGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACGACGGGG 304
                                                                                                                                                                                                                                                                                                                                                                    212 GIGCCCCCTCTGCTCGGCCTAGACCTGAGCTCATTAGGCGGCAGCGG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 37.2; DB 9;
Pred. No. 0.55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/10/112,193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Ashkenazi, Avi J.
TITLE OF INVENTION: Apo-3 POLYPEPTIDE
NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: P1052R1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/928,069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: WinPatin (Genentech) CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE DESCRIPTION: SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 11-Sep-1997
APPLICATION NUMBER: 60/026943
FILING DATE: 23-Sep-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Marschang, Diane L. REGISTRATION NUMBER: 35,600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Genentech, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: South San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 28-Mar-2002 CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 5, Application US/10112193 Publication No. US20030004313A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 650/952-9881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS
LENGTH: 1438 base pa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: Nucleic Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1 DNA Way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 11.8
Best Local Similarity 47.6
Matches 108; Conservative
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 94080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-112-193-5/c
  Matches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-112-193-5
                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 11
                                                                                        q
                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                        à
                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                ö
                                                                                                                                                         78 GCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                    392 GCGCCCCTCCATAGCCCTCCGACGGCCCCCAGGGGCTTCCCGGCTCCGTGCTCTC 333
                                                                                                                                                                                                                                                 138 CCTCCGGGATGCAGACCAACCCAGCCCAACCCTGCGGGCCCCCCTCGGTGCCCCTGGCA 197
                                                                                                                                                                                                                                                                                               332 TGCCCGTCGTGGTTCCGCCTTCAGCCCCGCGCCCGCAGGGCCCCGCCCCGCGCCGTCGAGA 273
                                                                                                                                                                                                                                                                                                                                            198 GGATGACGCCTTCATCCGGAGGGCCGCCCANGCAAGGCCAAGGAACTGGGGCTGCGGGC 257
                                                                                                                                                                                                                                                                                                                                                                                     272 AGGCCCCCCCTGCCGGGGGGGGGGGGGGGCCCCCCGAGCCCAACCGAGTCCGACCAG 213
                                                                                                                ó
                                                                  Length 1438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1438;
                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 212 GTGCCCCTCTGCTCGCCTAGACCTCATTAGGCGCAGCGG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                  258 AGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGG 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Apo-2 LI AND Apo-3 POLYPEPTIDES NUMBER OF SEQUENCES: 28 CORRESPONDENCE ADDRESS: ADDRESSER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WinPatin (Genentech)
                                                              Score 37.2; DB 9;
Pred. No. 0.55;
0; Mismatches 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 37.2; DB 9;
Pred. No. 0.55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/828,683A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/112,793
FILING DATE: 28-Mar-2002
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: $1007P1
SEQUENCE DESCRIPTION: SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE DESCRIPTION: SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 31-Mar-1997
APPLICATION NUMBER: 08/625328
FILING DATE: 1-Apr-1996
APPLICATION NUMBER: 08/710802
FILING DATE: 23-Sep-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER: 35,600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-5416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Marschang, Diane L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5, Application US/10112793 Publication No. US20020192729A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGIH: 1438 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELEFAX: 650/952-9881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: Single
TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.8%;
47.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS
                                                              11.8%;
ilarity 47.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: Nucleic Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 94080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-112-793-5/c
                                                                                                           Matches 108;
  ;
US-10-081-280-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-112-793-5
                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                           ð
                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
```

ó

```
212 GIGCCCCCTCIGCTCGCCCTAGACCTCATTAGGCGGCAGCGG 166
                                                                              RESULT 13
                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
332 TGCCCGTCGTGGTTCCGCCTTCAGCCCCGCCGCAGGGCCCGCCGCCGCGCGGAGA 273
                                                                                272 AGGCCCCCTGCCGGGGGGGGGGGCCCCCCGGGCCCAACCGAGTCCGACCAG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78 GCGTTCGCGGCGCCGTGGCACTCGGCCAGGTGGCTTCTGCACGCCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138 CCTCCGGGATGCAGAGACCACCCAGCCCCAGCGCGGGGCCCCCTCGGTGCCCTGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGATGACGCCTTCATCCGGAGGGCGCCCCANGCAAGGGCAAGGAACTGGGGCTGCGGGC 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272 AGGCCCCGCCTGGCGGGGGGGGGGGGGGCCGCCCGAGCCGAGCCGAGTCCGACCAG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     198 GGATGACGCCTTCATCCGGAGGGCGCCCCANGCAAGGGCAAGGAACTGGGGCTGCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1438;
                                                                                                                                  258 AGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGG 304
                                                                                                                                                                        212 GIGCCCCCTCTGCTCGGCCTAGACCTGAGCTCATTAGGCGGCAGCGG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGG 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
                                                                                                                                                                                                                                                                 Sequence 5, Application US/09884733

Patent No. US20020123116A1
GENERAL INFORMATION:
TITLE OF INVENTION: Apo-2 Ligand Inhibitor
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
STREET: 460 Point San Bruno Blvd
CITY: South San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; DB 10;
0.55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 11.8%; Score 37.2; D
Best Local Similarity 47.6%; Pred. No. 0.55
Matches 108; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: MATSCHANG, Diane L.
REGISTRATION NUMBER: 35,600
REFERENCE/DOCKET NUMBER: P1007
TELECOMMUNICATION INFORMATION:
TELEFRONE: 415/225-5416
TELEFA: 910/371-7168
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/884,733
FILING DATE: 19-Jun-2001
CLASSIFICATION: <UNKnown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:

**PAPLICATION WUNBER: 09/304,003

**FILING DATE: 14-JUNE-2000

ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: Linear
SEQUENCE DESCRIPTION: SEQ ID NO: 5:
US-09-884-733-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 1438 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: Nucleic Acid
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: USA
                                                                                                                                                                                                                                  RESULT 12
US-09-884-733-5/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 258
                                                                                            g
                                                                                                                                  ò
                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
```

```
78 GCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    138 CCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCCTCGGTGCCCCTGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198 GGATGACGCCTTCATCCGGAGGGCGCCCCANGCAAGGCCAAGGAACTGGGGCTGCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        212 GTGCCCCCTCTGCTCGGCCTGAGCTCATTAGGCGGCAGCGG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            258 AGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGG 304
                                                                                    APPLICANT: Ashkenazi, Avi J.
TITLE OF INVENTION: Apo-2 LI AND Apo-3 POLYPEPTIDES
NUMBER OF SEQUENCES: 11
                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk COMPUTER: 1BM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: WinPatin (Genentech)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2; DB 10;
0.55;
                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/993,234
FILING DATE: 19-No. US20020146768A1-2001
CLASSIFICATION: <UNKnown>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 37.2; DB 10;
Pred. No. 0.55;
0; Mismatches 119;
                                                                                                                                                                              Inc.
Bruno Blvd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: MAYECHANG, Diane L.
REGISTRATION WIMBER: 35,600
REFERENCE/DOCKET NUMBER: P1007P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 08/828,683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: Linear
SEQUENCE DESCRIPTION: SEQ ID NO: 5:
                                                                                                                                                                         ADDRESSEE: Genentech, Inc.
STREET: 460 Point San Brun
CITY: South San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 44, Application US/09945901 Patent No. US20020161215A1
US-09-993-234-5/c; Sequence 5, Application US/09993234; Patent No. US20020146768A1; CENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: 415/225-5416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1438 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: Nucleic Acid
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 415/952-988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEX: 910/371-7168 INFORMATION FOR SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                              STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 11.8'
Best Local Similarity 47.6'
Matches 108; Conservative
                                                                                                                                                                                                                                                                   COUNTRY: USA
                                                                                                                                                                                                                                                                                     94080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
US-09-945-901-44/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-993-234-5
```

```
HUMAN N-METHYL-D-ASPARTATE RECEPTOR SUBUNITS, NUCLEIC ACIDS ENCODING SAME AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2806 TGCTGCCAGGCGGGGGCCCCTGCTCGCCTGGCAGGCCTCCGGTAGATCGGC 2747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2866 CAGACAGCCCCCCAGCACAATGGCAGGTGGGCGTGCGGCGTGCAGACGTGCTGTCTG 2807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2926 AGAGGCCCCCAGGCGCCGGAGAGCCAGGAGCCGTGGCTGTCACAGGGTGGAAGGTGAGGT 2867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73 CAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 3243;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches 150; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Heller Ehrman White & McAuliffe
STREET: 4250 Executive Square, 7th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5; DB 9;
0.92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/09/648,797
FILING DATE: 28-Aug-2000
APPLICATION NUMBER: US/08/940,086A
FILING DATE: 29-SEPT-97
APPLICATION NUMBER: US 08/231,193
APPLICATION NUMBER: US 08/052,449
FILING DATE: 20-APR-1994
FILING DATE: 20-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Seidman, Stephanie
REGISTRATION NUMBER: 33,779
REFERENCE/DOCKET NUMBER: 24735-9383C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/10/007,747 FILING DATE: 07-Dec-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 36.6;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC COmpatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: 1...3243
SEQUENCE DESCRIPTION: SEQ ID NO: 44:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: Coding Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (619) 450-8400
TELEFAX: (619) 450-8499
INFORMATION FOR SEQ ID NO: 44:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
                                                                                                     Sequence 44, Application US/10007747 Patent No. US20020161193A1 GENERAL INFORMATION:
                                                                                                                                                                                                          APPLICANT: Daggett, Lorrie P. Ellis, Steven B. Liaw, Chen W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 3243 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: nucleic acid
STRANDEDNESS: unknown
                                                                                                                                                                                                                                                                                                               Lu, Chin-Chun
TITLE OF INVENTION: HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 11.7%;
Best Local Similarity 45.7%;
Matches 126; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: CA
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 92037
                                                                        JS-10-007-747-44/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-007-747-44
                                    RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                      TITLE OF INVENTION: HUMAN N-METHYL-D-ASPARTATE RECEPTOR SUBUNITS, NUCLEIC ACIDS ENCODING SAME AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2806 TGCTGCCAGGCGGGGCCCCTGCCTGCTCGCCTCCTGGCAGGCCTCCCGGTAGATCGGC 2747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2926 AGAGGCCCCCAGGCGCCGGAGAGCCAGGAGCCGTGGCTGTCACAGGGTGGAAGGTGAGGA 2867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73 CAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGGGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCCTCGGTGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 3243;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                            ADDRESSEE: Heller Ehrman White & McAuliffe STREET: 4250 Executive Square, 7th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11.7%; Score 36.6; DB 9; 45.7%; Pred. No. 0.92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Seidman, Stephanie
REGISTRATION NUMBER: 33,779
REFERENCE/DOCKET NUMBER: 6362-9383E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/940,035
FILING DATE: <UNKNOWN>
FILING DATE: <UNKNOWN>
FILING DATE: 20-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
RAPPLICATION NUMBER: US/09/945,901
FILING DATE: 24-Jan-2001
CLASSIFICATION: <a href="https://ducaphys.org/">CLASSIFICATION</a>: <a href="https://ducaphys.org/">ADVIDENTING</a>: <a href="https://ducaphys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: 1...3243
SEQUENCE DESCRIPTION: SEQ ID NO: 44:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Coding Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-238-0999
TELEFAX: 619-238-0062
                                    APPLICANT: Daggett, Lorrie P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 3243 base pairs
                                                                        Ellis, Steven B.
Liaw, Chen W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: nucleic acid
STRANDEDNESS: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: 44:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS
                                                                                                                                     Chin-Chun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 11.73
Best Local Similarity 45.7
Matches 126; Conservative
                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                    CITY: La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: CDNA
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-945-901-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
```

ö

Qy

Search completed: March 1, 2003, 09:03:39
Job time: 19.892 secs

-

```
(without alignments)
11498.584 Million cell updates/sec
                                                                                                                              February 28, 2003, 23:39:42; Search time 46.5329 Seconds
                                                                                                                                                                                                                                       314
1 atgtcatggtttagtggcct.....acaccggcggaccgctgaa 314
GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                     3936061 segs, 852009584 residues
                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                      IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                   US-09-750-240-1
                                                                                                                                                                                                                   Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                Run on:
```

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

1: /cgn2_6/ptodata/2/pna/PCT_NEW_COMB.seq:*
2: /cgn2_6/ptodata/2/pna/USOS_NEW_COMB.seq:*
4: /cgn2_6/ptodata/2/pna/USOS_NEW_COMB.seq:*
5: /cgn2_6/ptodata/2/pna/USOS_NEW_COMB.seq:*
5: /cgn2_6/ptodata/2/pna/USOS_NEW_COMB.seq:*
6: /cgn2_6/ptodata/2/pna/USOS_NEW_COMB.seq:*
7: /cgn2_6/ptodata/2/pna/USIO_NEW_COMB.seq:*
7: /cgn2_6/ptodata/2/pna/USIO_NEW_COMB.seq:* Pending_Patents_NA_New:* Database:

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			æ			SUMMARIES	
Result No.	ult No.	Score	Query Match	Query Match Length	DB	ID	Description
	Н	295.2	94.0	1386	н	PCT-US02-36759-83	Sequence 83, Appl
	~	199.2	63.4	5826	9	US-10-144-771-5921	Sequence 5921, Ap
ပ	3	39.8	12.7		9	US-10-152-724-24	24,
O	4	39.8	12.7	3630	9	US-10-152-724A-24	
O	Ω	38.2	12.2		Ŋ	US-09-724-676-33617	336
ပ	و	38.2	12.2		5	US-09-724-676A-33617	
	7	38.2	12.2	m	9	US-10-218-140-5849	
O	œ	38.2	12.2	m	ហ	US-09-724-676-33618	
U	σ	38.2	12.2		വ	US-09-724-676A-33618	
O	10	36.6	11.7		н	PCT-US02-38526-349	
ပ	11	36.6	11.7			PCT-US02-38526-347	347,
υ	12	36.4	11.6		വ	US-09-585-645A-59	59, 7
ပ	13	36	11.5		9	US-10-287-313-16	16,
ပ	14	5	11.4		വ	US-09-724-676-45770	45
O	15	35.8	11.4	1824	Ŋ	19-72	-
ပ	16	5	11.2		9	US-10-125-923A-157	157,
O	17	5	11.2		9	•	٠.
ပ	18	D.	11.2		9	174-	157,
ပ	19	5.	11.2		9	0 - 174 -	157,
ပ	20	٠.	11.2	2883	9	-10-015-6	23, A
ပ	21	'n.	11.2	2883	9	US-10-226-254A-23	23,
O	22	'n.	11.2	2883	9	US-10-187-755-157	157,
ပ	23	'n.	11.2	2883	9	US-10-187-749-157	157,
υ	24	Ŋ.	11.2	2883	9	US-10-017-253A-23	23,
ပ	25	5.	11.2	2883	9	US-10-199-672-157	15
υ	56	35.2	11.2	2883	9	US-10-194-486-157	157,

Sequence 3, Appli Sequence 5, Appli Sequence 1, Appli Sequence 1, Appli Sequence 1, Appli Sequence 652, Appli Sequence 179, Appli Sequence 179, Appli Sequence 179, Appli Sequence 179, Appli Sequence 175, Appli Sequence 175, Appli Sequence 143, Appli Sequence 143, Appli Sequence 143, Appli Sequence 143, Appli Sequence 144, Appli Sequence 144, Appli Sequence 144, Appli Sequence 14604, Appli
PCT-USO2-32117-3 US-10-271-697-3 PCT-USO2-38445-65 US-09-513-999C-21648 PCT-USO2-32117-1 US-10-271-697-1 US-10-949-002-652 US-10-144-771-23402 US-10-094-886A-179 US-10-094-886A-179 US-10-144-771-1257 US-10-144-771-126872 PCT-USO2-31358-143 US-10-266-839-143 US-60-443-566-1374 US-60-443-566-1374 US-09-724-676-14604
29746666666666666
4303 11903 11903 1204 1205 1205 1005 11005 11305 11305
00000000000000000000000000000000000000
αυ αυμακα μα αυμα αυμα αυμα αυμα αυμα αυ
722266666666666444444 7886066666666444444
00 0000 0000 00 00

ALIGNMENTS

RESULT 1 PCT-US02-36759-83

```
APPLICANT: ZHENO, Wenjin
APPLICANT: GAO, Jing
TITLE OF INVENTION: RECEPTORS AND MEMBRANE-ASSOCIATED PROTEINS
FILE REFERENCE: PF-1279 PCT
CURRENT APPLICATION NUMBER: PCT/US02/36759
Sequence 83, Application PC/TUS0236759 GENERAL INFORMATION: APPLICANT: INCYTE GENOMICS, INC.
                                                                                                                                                                       BECHA, Shanya D.
YUE, Henry
LEHR-MASON, Patricia M.
THANGAVELU, Kavitha
                         DUGGAN, Brendan M.
YANG, Junming
GIFFFEN
                                                                     GIETZEN, Kimberly J.
LEE, Soo Yeun
TANG, Y. Tom
AZIMZAI, Yalda
WALIA, Narinder K.
WARREN, Bridget A.
                                                                                                                                                                                                                                                                                                                                                                                                                      KALLICK, Deborah A. GRIFFIN, Jennifer A. ELLIOTT, Vicki S. GORVAD, Ann E. HAFALIA, April J.A. ISON, Craig H. JIN, Pei
                                                                                                                                                                                                                                                                                                                                                MARQUIS, Joseph P.
LAL, Preeti G.
FORSYTHE, Ian J.
LEE, Ernestine A.
SWARNAKAR, Anita.
                                                                                                                                                                                                                                    LEE, Sally
EMERLING, Brooke M.
                                                                                                                                                                                                                                                                                                                                    Thomas
                                                                                                                                                                                                                                                             KABLE, Amy E.
KHARE, Reena
BAUGHN, Mariah R.
GANDHI, Ameena R.
TRAN, Uyen K.
RICHARDSON, Thomas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BURRILL, John D.
BLAKE, Julie J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JACKSON, Alan
BHATIA, Umesh
                                                                                                                                                              BARROSO, Ines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JIANG, Xin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HO, Ann
                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                           APPLICANT:
APPLICANT:
                                                                        APPLICANT: APPLICANT:
                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                             APPLICANT:
                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                    APPLICANT
                                                                                                                                 APPLICANT
                                                                                                                                                              APPLICANT
                                                                                                                                                                                                                                     APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT
                                                                                                                                                                                                                                                                                                                                                     APPLICANT
                                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT
```

9

2

```
Db 34505 GAGTGCGGGGCCCCGGCGGGAGTGGGCGGGAGCCTCCCCTACCCCTACCCCCGACCGGCAG 34446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34445 CCCTACGCCGCAGCTCCTCCCTGCCCCTCCTTCCGCCCGGGAGTCCCCGCCC 34386
                                                                                                                                                                                                                          CCCCCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                  GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78 GCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                         213 CCTCGCTACATGAGCTGCCTCAAGAATGCGGAGCCACCCCACCCCACTCCTGCAGCTACA
                               96 ATGTCATGGTTTAGTGGCCTCCTGGTTCCCAAAGTGGATGAACGGAAAAACAGCTTGGGGG
                                                                                                     138 CCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCCTCGGTGCCCCTGGCA
           1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                 62; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-152-724A-24/C
Sequence 24, Application US/10152724A
GENERAL IRFORMATION:
APPLICANT: LITTLE, Melissa
APPLICANT: KOLLE, Gabriel
APPLICANT: YAMADA, Toshiya
APPLICANT: YAMADA, Toshiya
APPLICANT: WIKKINSON, LOTINE
APPLICANT: WILKINSON, LOTINE
TITLE OF INVENTION: Novel Nucleic Acid and Polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 24, Application US/10152724
GENERAL INFORMATION:
APPLICANT: LITTLE, Melissa
APPLICANT: HOLMES, Gregory
APPLICANT: KOLLE, Gabriel
APPLICANT: YAMADA, TOSHIYA
APPLICANT: WILKINSON, Lorine
TITLE OF INVENTION: Novel Nucleic Acid and Polypeptide
FILE REFERENCE: P22378
CURRENT APPLICATION NUMBER: US/10/152,724
CURRENT APPLICATION NUMBER: US/10/152,724
CURRENT FILING DATE: 2002-05-23
PRIOR APPLICATION NUMBER: Australian App No PQ 4348
PRIOR FILING DATE: 1999-11-26
NUMBER OF SEQ ID NOS: 24
SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 39.8; D
Pred. No. 1.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34385 TCTCGCCTCCTTCCTCGG 34367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198 GGATGACGCCTTCATCCGG 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 12.7%;
Best Local Similarity 55.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-152-724-24
                                                                                                                                                                                                                                                                                                                                                                                           RESULT 3
US-10-152-724-24/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 36303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                    156
                                                                                                                                                      121
                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                           g
                                                                                δ
                                                                                                                  ρp
                                                                                                                                                      δ
                                                                                                                                                                                      οp
                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 GAACGCAATGGGCAGAAGCGTTCGCGGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGCGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5921, Application US/10144771
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig
TITLE OF THYONION: HUMAN GENOME DISCOVERY SYSTEM AND USES THEREOF
FILE REFERENCE: CL001321
CURRENT APPLICATION NUMBER: US/10/144,771
CURRENT FILING DATE: 2002-05-15
NUMBER OF SEQ ID NOS: 47235
SEQ ID NO 5921
LENGTH: 5826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1386;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 5826;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 94.0%; Score 295.2; DB 1
Best Local Similarity 97.1%; Pred. No. 1.6e-65;
Matches 300; Conservative 0; Mismatches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 199.2; DB 6
Pred. No. 4.3e-41;
0; Mismatches 49
                                                                                                                                                                                                                                                                                                                                                                     ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No: 7506194CB1
PCT-US02-36759-83
CURRENT FILING DATE: 2002-11-13
PRIOR APPLICATION NUMBER: US 60/333,097
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-15
PRIOR FILING DATE: 2001-11-15
PRIOR APPLICATION NUMBER: US 60/340,542
PRIOR FILING DATE: 2001-12-14
PRIOR APPLICATION NUMBER: US 60/342,166
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2002-01-11
PRIOR FILING DATE: 2002-01-14
PRIOR FILING DATE: 2002-01-14
PRIOR FILING DATE: 2002-01-14
SOFTHARE OF SEQ ID NOS: 94
SED ID NO 83
LENGTH: 1386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity 82.3
241; Conservative
                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         325 GCCGGGACG 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TYPE: DNA
; ORGANISM: HUMAN
US-10-144-771-5921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-144-771-5921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Si
Matches 241;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
```

ö

. 0

Length 36303;

us-09-750-240-1.rnpn

```
-10-218-140-5849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 5849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                            Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                   ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                         Db 34505 GAGTGCGGGGCCCCGGGGGGGGGGGGGGGCTCCCCTACCCTTCGCCCGACCGCAG 34446
                                                                                                                                                                                                                                                                                                                                                                                                                                  34445 CCCTACGCCCCCAGCTCCTCCCTGCGCCTCCTTCCGCCCGGACGCGGGACTCCCCGCCC 34386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73 CAGAAGCGTTCGCGGCGCCCTGGCACTCGGGCAGGTGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            133 AGTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   193 TGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCCANGCAAGGGCAAGGAACTGGGGGCTG 252
                                                                                                                                                                                                                                                                                                                      78 GCGTTCGCGGCGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                               138 CCTCCGGGATGCAGAGCCACCCAGCCCCAGGGGGCCCCCTCGGTGCCCCTGGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                              Score 39.8; DB 6; Length 36303;
Pred. No. 1.4;
0; Mismatches 62; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 5; Length 1878;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
US-09-724-676-33617/c
Sequence 33617, Application US/09724676
Sequence 33617, Application US/09724676
SERNEAL INFORMATION:
TITLE OF INVENTION: Variants of alternative splicing
FILE REFERENCE: 129181.4 Compugen
CURRENT APPLICATION NUMBER: US/09/724,676
CURRENT FILING DATE: 2000-11-28
NUMBER OF SEQ ID NOS: 97222
SOFTWARE: Patentin version 3.2
SEQ ID NO 33617

LENGTH: 1878
FILE REFERENCE: P22378
CURRENT APPLICATION NUMBER: US/10/152,724A
CURRENT FILLING DATE: 2002-05-23
PRIOR APPLICATION NUMBER: Australian App No PQ 4348
PRIOR FILING DATE: 1999-11-26
NUMBER OF SEQ ID NOS: 24
SOFTWARE: Patentin version 3.1
SEQ ID NO 24
LENGTH: 36303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 38.2; DB 5;
Pred. No. 1.9;
0; Mismatches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1079 CAGGGGGCCGGTGCACCCAGCGGCAGCGGGGTG 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             253 CGGCCAGTGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34385 TCTCGCCTCCTTCCTCCGG 34367
                                                                                                                                                                                                                                              Ouery Match 12.7%;
Best Local Similarity 55.4%;
Matches 77; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198 GGATGACGCCTTCATCCGG 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 12.2%;
Best Local Similarity 46.0%;
Matches 127; Conservative
                                                                                                                                                                                      ; ORGANISM: Homo sapiens
US-10-152-724A-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; ORGANISM: Homo sapiens
US-09-724-676-33617
                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                              οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          пр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

RESULT 6

```
1199 TGCTGCCAGGCGGGGCCCCTGCCTGCTCGCCTCCTGGCAGGCCTCCCGGTAGATCGGC 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73 CAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGGGGCTTCTGCACGCCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGGGGGCCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12.2%; Score 38.2; DB 5; Length 1878; 46.0%; Pred. No. 1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Leach, Martin D.
APPLICANT: Shinkets, Richard A.
APPLICANT: Shinkets, Richard A.
TITLE OF INVENTION: NOVEL POLYMUCLECTIDES AND POLYPEPTIDES
TITLE OF INVENTION: ENCODED THEREBY
FILE REFERENCE: 15966-543 CON
CURRENT APPLICATION NUMBER: 02/10/218,140
CURRENT FILING DATE: 2000-03-30
PRIOR PILING DATE: 2000-03-30
PRIOR FILING DATE: 1999-04-05
PRIOR FILING DATE: 1999-04-02
PRIOR FILING DATE: 1999-04-02
PRIOR FILING DATE: 1999-03-31
NUMBER OF SOZION NUMBER: 60/127,636
PRIOR FILING DATE: 1999-03-31
NUMBER OF SOZION NUMBER: 60/127,636
PRIOR FILING DATE: 1999-03-31
NUMBER OF SOZION NUMBER: 60/127,636
PRIOR FILING DATE: 1999-03-31
US-09-724-676A-33617/c

Sequence 33617, Application US/09724676A

GENERAL INFORMATION:
APPLICART: Compugen LTD

TITLE OF INVENTION: Variants of alternative splicing
FILE REFERENCE: 129181.4 Compugen
CURRENT APPLICATION NUMBER: US/09/724,676A

CURRENT FILE DATE: 2000-11-28

NUMBER OF SEQ ID NOS: 97222

SEQ ID NO 33617

LENGTH: 1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253 CGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: (1)...(1)
OTHER INFORMATION: "n" = "a", "c", "t" or "g"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 5849, Application US/10218140 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 127; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
NAME/KEY: CDS
LOCATION: (1870)..(2332)
FEATURE:
                                                                                                                                                                                                                                                                                                                             TYPE: DNA
CORGANISM: Homo sapiens
US-09-724-676A-33617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
```

ö

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                   ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ő
                                                                                                                                                                                                                                                                                                                                                                                                                               2109 AGGCTTAGTCCAGTTCCTGGGGGGGGGGCAGGCAGGCCCTGGCAAGTGCCCAGGGT 2168
                                                                                                                                                                                                                                                                                                                                                         2049 GCCCCCTCCAGGCTCCAACCCACAGCCTCCGGGTCGCCACATTGCCCTCAGC 2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2623 AGAGGCCCCAGGCCCCGGAGAGCCAGGAGCGGGCTGGCAGGGTGGAAGGTGAGGA 2564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              137 GCCTCCGGGATGCAGAGCCACCCAGCCCCAGCCCTGGGGGCCCCCTCGGTGCCCCTGGC 196
                                                                                                                                                                                                                                                                                                                                                                                                           73 CAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133 AGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGGGGGCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGCAGGATGACGCCTTCATCCGGAGGGGGGGCCCCANGCAAGGGAAGTGGGGGCTG
                                                                                                                                                                                                                                                             Length 3174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3182;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12.2%; Score 38.2; DB 5; Length 3 46.0%; Pred. No. 2.1; Live 0; Mismatches 149; Indels
                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: Variants of alternative splicing FILE REFERENCE: 129181.4 Compugen CURRENT APPLICATION UNMBER: US/09/724,676 CURRENT APPLICATION UNMBER: 02/09/724,676 NUMBER OF SEQ ID NOS: 97222 SOFTWARE: Patentin version 3.2 SECTION 33618
                                                                                                                                                                                                                                                                                                 :69
                                                                                                                                                                                                                                                           12.2%; Score 38.2; DB 6;
llarity 53.4%; Pred. No. 2.1;
Conservative 0; Mismatches 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2383 cadecededecegracaceaecedecaecaecre 2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG 288
                                                                                                                                                                                                        or "g
                                                                                                                                                                                                                                                                                                 0; Mismatches
                                | COCATION: (961)...(961)
| COTHER INFORMATION: "n" = "a", "c", "t" or
| FEATURE:
| NAME/KEY: misc_feature
| LOCATION: (1191)...(1191)
| COTHER INFORMATION: "n" = "a", "c", "t" or
| FEATURE:
| COCATION: (1193)...(1193)
| COCATION: (1193)...(1193)
| COTHER INFORMATION: "n" = "a", "c", "t" or
| US-10-218-140-5849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ||| ||||||| || CAGGGGCCTAGCTGGACATCCA 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTGGCCCTGGGCTTCGAAGATACCGA 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 33618, Application US/09724676 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best_Local Similarity 46.0
Matches 127; Conservative
FEATURE:
NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-724-676-33618
                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 79; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-724-676-33618/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                         197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
```

```
APPLICANT: Tang, T. Tumin
APPLICANT: Wang, Jian-Rui
APPLICANT: Wang, Zhiwei
APPLICANT: Wang, Zhiwei
APPLICANT: Zhao, Qing
APPLICANT: Zhao, Qing
APPLICANT: Zhao, Qing
APPLICANT: Au, Chongjun
APPLICANT: Mulero, Julio J
PRIOR PLILING DATE: 2000-12-20
PRIOR APPLICATION NUMBER: PCT/USO0/35017
PRIOR PLILING DATE: 2000-07-19
PRIOR PLILING DATE: 2000-07-19
PRIOR PLILING DATE: 2000-07-12
PRIOR APPLICATION NUMBER: US 09/496,914
PRIOR PLILING DATE: 2000-12-26
PRIOR APPLICATION NUMBER: US 09/496,914
PRIOR PLILING DATE: 2000-01-2-6
PRIOR PLILING DATE: 2000-01-2-6
PRIOR APPLICATION NUMBER: US 09/496,914
PRIOR PLILING DATE: 2000-01-2-6
PRIOR APPLICATION NUMBER: US 09/496,914
PRIOR APPLICATION NUMBER: US 09/426,975
PRIOR APPLICATION NUMBER: US 09/427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2443 AAGCACATGGACTGCGCCTGCGCCAAGCGCCTGCAGGCCGAGTGGCCGTCGGGGCGGGGC 2384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73 CAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATG 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             133 AGTGCCTCCGGGATGCAGAGCCACCCAGCCCACCCTGCGGGCCCCCTCGGTGCCCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13 AGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      193 TGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCANGCAAGGGCAAGGAACTGGGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                        TITLE OF INVENTION: Variants of alternative splicing FILE REFERENCE: 129181.4 Compugen CURRENT APPLICATION VIMBER: US/09/724,676A CURRENT APPLICATION VIMBER: US/09/724,676A CURRENT FILING DATE: 2000-11-28 NUMBER OF SEQ ID NOS: 97222 SOFTWARE: Patentin version 3.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 38.2; DB 5;
Pred. No. 2.1;
0; Mismatches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2383 CAGGCGGGCCGGTGCACCCAGCGGGCAGCTG 2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           253 CGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTG 288
US-09-724-676A-33618/c
; Sequence 33618, Application US/09724676A
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 349, Application PC/TUS0238526 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 12.2%;
Best Local Similarity 46.0%;
Matches 127; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Ghosh, Malabika
                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Homo sapiens US-09-724-676A-33618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 33618
LENGTH: 3182
```

S

```
Sequence 59, Application US/09585645A

Sequence 59, Application US/09585645A

GENERAL INFORMATION:
APPLICANT: Zoghbi, Huda
APPLICANT: Bermingham, Nessan
APPLICANT: Bermingham, Nessan
APPLICANT: Bermingham, Nissim
TITLE OF INVENTION: Compositions and Methods for Therapeutic Use of Atonal-associa
TITLE OF INVENTION: Compositions and Methods for Therapeutic Use of Atonal-associa
TITLE OF INVENTION: Compositions and Methods for Therapeutic Use of Atonal-associa
TITLE OF INVENTION: Compositions and Methods for Therapeutic Use of Atonal-associa
TITLE OF INVENTION: Compositions and Methods for Therapeutic Use of Atonal-associa
TITLE OF INVENTION: Compositions and Methods for Therapeutic Use of Atonal-associa
TITLE OF INVENTION NUMBER: US 60/137,060
PRIOR APPLICATION NUMBER: US 60/137,060
PRIOR PILING DATE: 1999-06-01
PRIOR PILING DATE: 1999-06-01
PRIOR PILING DATE: 1000-01-19
                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   130 ATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCTGCGGGCCCCCTCGGTGC 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190 CCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGGCAAGGAACTGGGG 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110 GCTTCTGCACGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCACCC 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70 GGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTAT 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 170 CTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCAN 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    821 GGGCGCTGGGCCTCGCGGGGGGGCTCGGGCTCCTTCGGGGCCTCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               250 CTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGGG 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
11.6%; Score 36.4; DB 5; Length 485;
Best Local Similarity 54.7%; Pred. No. 4;
Matches 70; Conservative 0; Mismatches 58; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 125; Indels
                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                           Score 36.6;
Pred. No. 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature

: LOCATION: (147)...(147)

OTHER INFORMATION: n can be any nucleotide

US-09-585-645A-59
                                                                                                                                                                                                                                                                                                                                                                       11.78;
47.08;
       SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 70 SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                           Query Match 11.7
Best Local Similarity 47.0
Matches 111; Conservative
                                                                                                      TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                 ; LOCATION: (1)..(1542)
; OTHER INFORMATION:
PCT-US02-38526-347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: CHICKEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBE: Pates
SOFTWARE: Pates
SEQ ID NO 59
                                                                                                                                                                                                            NAME/KEY: CDS
                               SEQ ID NO 347
LENGTH: 2216
                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AFPLICANT: BOJIE; BLYIER BY JUNION WETHORS AND MATERIALS RELATING TO NOVEL POLYPEPTIDES AND POLYNUCL FILE REFERENCE: HYS-B1/PCT CURRENT APPLICATION NUMBER: PCT/US02/38526 CURRENT FILING DATE: 2002-12-03 PRIOR PELING DATE: 2000-01-21 PRIOR APPLICATION NUMBER: US 09/488,725 PRIOR APPLICATION NUMBER: US 09/552,317 PRIOR APPLICATION NUMBER: US 09/552,317 PRIOR FILING DATE: 2000-04-25 PRIOR FILING DATE: 2000-04-25 PRIOR FILING DATE: 2000-04-26 PRIOR FILING DATE: 2000-04-26 PRIOR FILING DATE: 2000-04-26 PRIOR FILING DATE: 2000-04-29 PRIOR PILING DATE: 2000-02-22 PRIOR PILING DATE: 2000-02-22 PRIOR PILING DATE: 2000-02-22 PRIOR PILING DATE: 2000-02-22 PRIOR PILING DATE: 2000-02-26 PRIOR P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     821 GGGCGGCTGGGCGGGGGGGGGGCTCGGGCTGCAGCGGCTCCTTCGGGGCCTCTGCG 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               130 ATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCCCCTCGGTGC 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70 GGCCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTAT 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NOMBER: US 09/450,314
PRIOR APPLICATION NUMBER: US 09/560,875
PRIOR APPLICATION NUMBER: US 09/560,875
PRIOR FILING DATE: 2000-04-27
PRIOR PILING DATE: 2001-02-05
PRIOR RPLICATION NUMBER: US 09/598,075
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2000-06-20
PRIOR FILING DATE: 2001-02-05
NUMBER: OF SEQ ID NOS: 653
                     PRIOR APPLICATION NUMBER: US 09/598,075
PRIOR FILING DATE: 2000-06-20
PRIOR PLICATION NUMBER: PCT/US01/04098
PRIOR PILING DATE: 2001-02-05
PRIOR FILING DATE: 2001-02-05
NUMBER OF SEQ ID NOS: 653
SOFTWARE: PATENTIN VEFSION 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250 CTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGGG 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.7%; Score 36.6; DB 1; Length 1542; 47.0%; Pred. No. 4.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches 125; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 347, Application PC/TUS0238526 GENERAL INFORMATION:
PRIOR FILING DATE: 2001-02-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Ghosh, Malabika
APPLICANT: Tang, Y. Tom
APPLICANT: Wang, Jian-Rui
APPLICANT: Wang, Zhiwei
APPLICANT: Zhao, Qing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Xu, Chongjun
Mulero, Julio J
Boyle, Bryan J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 47.0 Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
PCT-US02-38526-347/c
                                                                                                                                                                                                                                                                                                                                                                                                       PCT-US02-38526-349
                                                                                                                                                                                                                                                                    SEQ ID NO 349
                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
```

```
APPLICANT: Compugen LTD
TITLE OF INVENTION: Variants of alternative splicing
FILE REFERENCE: 129181.4 Compugen
CURRENT APPLICATION NUMBER: US/09/724,676
CURRENT FILING DATE: 2000-11-28
NUMBER OF SEQ ID NOS: 97222
SOFTWARE: Patentin version 3.2
SEQ ID NO 45770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 45770, Application US/09724676A
GENERAL INFORMATION:
APPLICANT: Compugen LTD
TITLE OF INVENTION: Variants of alternative splicing
FILE REFERENCE: 129181.4 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 35.8;
Pred. No. 7.
                                                                                                                                                                                                                                                                               US-09-724-676-45770/c
; Sequence 45770, Application US/09724676
; GENERAL INFORMATION:
                                                                                                                                                                                             13319 AGGGAGGGACGGACGGACGCGGAC 13295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1454 AATGAACTTCCAGAGCTTGGTGACC 1430
                                                                                                                                                      220 GGCGGCCCANGCAAGGCAAGGAAC 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       284 AAGTGACAACGACACCGGGGGACC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
LOCATION: (1515)..(1516)
OTHER INFORMATION: n is a,c,g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; NAME/KEY: misc_feature
; LCCATION: (1528)..(1528)
; CTHER INFORMATION: n is a.c.g,
US-09-724-676-485770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: (1525)..(1525)
OTHER INFORMATION: n is a,c,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
NAME/KEY: misc_feature
LOCATION: (1522)..(1522)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
US-09-724-676A-45770/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                           qq
                                                                                                         QΩ
                                                                  ò
                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                          APPLICANT: Hadlaczky, Gyula
Szalay, Aladar
TITLE OF INVENTION: ARTIFICIAL CHROMOSOMES, USES THEREOF
AND METHODS FOR PREPARING ARTIFICIAL CHROMOSOMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db 13499 GAACTCGCAACACCCGGGGGGGACTCGCATCGCGCACGACGCCGCGGGGGTCCCGCGGG 13440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 CGGCCAGCTGCTTCTGCACGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCC 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40 GAACGGAAAACAGCCTGGGGTGAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACT 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11.5%; Score 36; DB 6; Length 22118;
llarity 48.3%; Pred. No. 12;
Conservative 0; Mismatches 106; Indels
                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSE: Heller Bhrman White & McAuliffe
STREEF: 4250 Executive Square, 7th Floor
CITY: La Jolla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/10/287,313
FILING DATE: 01-N0-2002
CLASSIFICATION: CUNKNOWN>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/724,726
FILING DATE: 10-APR-1997
APPLICATION NUMBER: 08/835,682
FILING DATE: 10-APR-1997
APPLICATION NUMBER: 08/695,191
FILING DATE: 07-ANG-1996
APPLICATION NUMBER: 08/695,080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Seidmen, Stephanie L
REGISTRATION NUMBER: 33,779
REFERENCE/DOCKET NUMBER: 6869-402N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; SEQUENCE DESCRIPTION: SEQ ID NO: 16:
US-10-287-313-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 15-JUL-1996
APPLICATION NUMBER: 08/629,822
FILING DATE: 10-APR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ Version 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
LENGTH: 22118 base pairs
                                                                                                                                                                       Sequence 16, Application US/10287313 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: 858-450-8403
TELEFAX: 858-587-5360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear MOLECULE TYPE: Genomic DNA HYPOTHETICAL: NO ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FRAGMENT TYPE: <Unknown>
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEX: <Unknown>
                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
es 99; Conserv
                                                133 CCACGGGC 126
                      230 GCAAGGGC 237
                                                                                                                             RESULT 13
US-10-287-313-16/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                      ò
                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
1514 CCCCCCAAAAAGGCAGGCAAGCCGCTGGGCGGTGGGACGTCACCACCGCAGGAAATCGCG 1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1634 CAGGGAGCCCCCCTCACCCCGGGGTCTGAGGTGGCACCAGGAGGGGGCTGGGGGCGCCC 1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           164 CCACCCCTGCGGGCCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCG 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104 CAGGTGGCTTCTGCACGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCC 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  224 GCCCANGCAAGGGCAAGGAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCG
160 AGCCCCACCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
```

ö

Mon Mar

```
ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 11.4%; Score 35.8; DB 5; Length 1824; Best Local Similarity 47.3%; Pred. No. 7.6; Matches 97; Conservative 0; Mismatches 108; Indels 0;
CURRENT APPLICATION NUMBER: US/09/724,676A
CURRENT FILING DATE: 2000-11-28
NUMBER OF SEQ ID NOS: 97222
SOFTWARE: PatentIn version 3.2
SEQ ID NOS: 97222
SEQ ID NOS: 97222
SEQ ID NOS: 97222

SEQ ID NOS: 97222

COGATION: (1515)
COGATION: (1515)...(1516)
COTHER INFORMATION: n is a.c.g, or t FEATURE:
NAME/KEY: misc_feature
COCATION: (1522)...(1523)
COTHER INFORMATION: n is a.c.g, or t FEATURE:
NAME/KEY: misc_feature
COCATION: (1525)...(1525)
COTHER INFORMATION: n is a.c.g, or t FEATURE:
NAME/KEY: misc_feature
COCATION: (1525)...(1525)
COTHER INFORMATION: n is a.c.g, or t FEATURE:
NAME/KEY: misc_feature
COCATION: (1528)...(1528)
COTHER INFORMATION: n is a.c.g, or t FEATURE:
NAME/KEY: misc_feature
COCATION: (1528)...(1528)
COCATION: (1528)...(1528)
COCATION: (1528)...(1528)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search completed: March 1, 2003, 08:59:38 Job time : 68.5329 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1454 AATGAACTTCCAGAGCTTGGTGACC 1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   284 AAGTGACAACGACACCGGGGGACC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
```

	4.5				
-					
4. 4.					. 1
t. Egy				*	ŧ.
ist.		y 12 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	a second de la compania de la compa		s, ge
*				•	
					a) •
					•

us-09-750-240-1.rst

OM nucleic

on:

```
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Bukaryota, Metazoa, Chordata, Sciurognathi, Muridae, Murinae,
1 (Dases 1 to 618)

R Akimura,T., Arakawa,T., Carninci,P., Furuno,M., Hanagaki,T., Inchamoto,K., Hiranoto,K., Hiranoto,K., Hiranoto,K., Miranota, M., Matsuyama,T.,
Y., Ito,M., Rawai,J., Kojima,Y., Konno, H., Konda,M., Matsuyama,T.,
Nakamura,M., Nishi,K., Nomura,K., Numasaki,R., Okazaki,Y., Okido,T.,
Saito,R., Sakai,C., Sakai,K., Sakai,K., Sakai,K., Sakai,K., Sakai,K., Sakai,K.,
Shibata,K., Shinagawa,A., Shiraki,T., Sogabe,Y., Suzuki,H., Tagawa,A., Takahashi,F., Takaku-Akahira,S., Tanaka,T., Tomaru,A., Toya,T.,
Watahiki,A., Yasunishi,A., Muramatsu,M. and Hayashizaki,Y.
RIKEN Encyclopedia of Mouse Full-length CDNAs (Akimura,T., et al.
                                                                                                                                                                                                                                                                                                                                                                BB866520 RIKEN full-length enriched, colon RCB-0549 Cle-H3 cDNA Musculus cDNA clone G431005N18 5', mRNA sequence.
        Drosophil
AGENCOURT
AGENCOURT
                                     Drosophil
Drosophil
                                                                                             AGENCOURT
140263 MA
Drosophil
                                                                                                                                                         Drosophil
Pan trogl
Pan trogl
Pan trogl
Pan trogl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Yoshihide-Hayashizaki
Laboratory for Genome Exploration Research Group, RIKEN Genomic
Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
                                                                                                                                                                                                                                AGENCOURT
BB656840
                                                                                                                                                                                                                602527810
                                                                                                                                                                                                                                                       140269 MA
                                Drosophil
                                                              trogl
                                                                                                                     AGENCOURT
                                                                                                                                    Drosophil
                                                                                                                                            Drosophil
                                                                                                                                                                                                                          Tetraodon
                                                       Pan trog
                                                                       AGENCOURT
                                                                                     Drosophil
                                                                                                                             Drosophi]
                                                                                                                                                    Drosophil
                                                                                                                                                                                                                                                               MI-P-AY1
                                                                                                                                                                                                                                                                      MI-P-CPO-
                                                                                                                                                                                                                                                                                             AL054280 I
                                                             AG073993
AL109567
AL109567
AL109567
BD646504
BD646504
BE233788
AL105168
AL056652
AL056652
AL066651
AG061139
AG073349
AG073349
AG073349
AG073349
AG073349
AG073349
AG073349
AG073349
AG073349
                                                                                                                                                                                                                               BQ886908
BB656840
BI403012
BE233791
BI399585
                                                                                                                                                                                                                                                                                                                             ALIGNMENTS
                                                                                                                          CNS0150D
CNS0052P
CNS0052P
CNS0072Q
                                                                                                                                                                                                         CNS0111L
BG481980
CNS02SC5
                                                             AG073983
BQ064125
CNS015Y4
CNS018NP
BQ646304
BE233788
CNS0159I
                                                                                                                                                                                                                                                                                     BI181902
CNS004NB
BI669206
                                                                                                                                                                                                                                                      BE233791
BI399585
                                                                                                                                                                                  AG061169
                                                                                                                                                                                                 AG030607
                                                                                                                                                                                                                                                                                                                                                                                           BB866520
BB866520.1 GI:17112730
Unpublished (2001)
846
932
932
925
1065
1010
1203
884
948
                                                                                                                                                          935
1125
906
935
1238
1738
877
878
878
878
878
878
635
635
635
687
725
883
935
                                                                                                                   1612
1101
844
844
932
                                                                                                                                                                                                                                                                                                                                                                                                                  house mouse.
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                    RESULT 1
BB866520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
O
                                     O
                                                                       O
                                                                                 000
                                                                                                                                            000
                                                                                                                                                                                   Ö
                                                                                                                                                                                                          O
                                                                                                                                                                                                                       ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BB866520 BB866520
BB866451 BB866451
AL212334 Tetraodon
BG916212 602814927
AL053013 Drosophil
                                                             (without alignments)
16864.108 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                             he number of results predicted by chance to have a than or equal to the score of the result being printed, by analysis of the total score distribution.
                                                    February 28, 2003, 21:14:01; Search time 301.551 Seconds
                                                                                                   1 atgtcatggtttagtggcct.....acaccggcgggaccgctgaa 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
      GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                        hits satisfying chosen parameters:
                                                                                                                                         16154066 segs, 8097743376 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                      - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BB866451
CNS02STX
BG916212
CNS0091P
CNS010EW
                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Π
                                                                                                                                                                                                                                                                                                                                                                                                                        em_gss_mus:*
em_gss_other:*
                                                                                                                                                                                                                                                                                                                                                                          em_gss_hum:*
em_gss_inv:*
em_gss_pln:*
                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                         em_gss_fun:*
em_gss_mam:*
                                                                                                                                                                                                                                                                                                                                                                                                                                       em_gss_pro:*
                                                                                                                                                                                                                                                                                                           gb_est2:*
gb_htc:*
gb_est3:*
gb_est4:*
gb_est4:*
em_est6:*
em_est6m:*
gb_gss:*
                                                                                                                                                                                                                                                                                                                                                                                                  em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                               em_gss_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                             the number of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
17
13
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                    US-09-750-240-1
                                                                                                                                                                                                                                              em_esthum:*
                                                                                                                                                                                                                                                                                     em_estro:*
em_htc:*
gb_est1:*
                                                                                                                                                                                                                                                                      em_estov:*
em_estpl:*
                                                                                                                                                                                                                                        em_estba:*
                                                                                                                                                                                                                                                      em_estin:*
                                                                                                                                                                                                                                                               em_estmu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          631
1011
941
925
1009
                                                                                                                                                                                                                                EST: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          57.3
19.2
18.7
16.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      greater the
                                                                                                                                                                                                                                                                                                     is
                                                                                                                                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                              No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
60.2
58.8
51.4
50.4
                                                                                                                   Scoring table:
                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     score gand is
```

Pred.

Result No.

00

Total number

Database

searched:

Sequence:

~

```
source
                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                RESULT 2
                                                                                                                   BB866451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /Lissue_type="colon"
/cell_line="RCB-0549 Cle-H3"
/cell_line="RCB-0549 Cle-H3"
/cell_line=RCB-044 Cell_lines; (cell_line=CRL-1751 WEHI 164),
(cell_line=RCB-0464 Meth-A), (cell_line=RCB-035 WEHI-3),
(cell_line=RCB-0559 K-1 FI), (cell_line=RCB-1283 B16
melanoma), (cell_type=Leydig cells, cell_line=CRL-1702 WEHI 231
), (cell_type=Leydig cells, cell_line=CRL-102 WEHI 231
), (cell_type=Leydig cells, cell_line=CRL-2065 MITC-1),
(tissue_type=bladder, cell_type=stroma cell,
(tissue_type=bone marrow, cell_type=stroma cell,
cell_line=RCB-0549 Cle-H3), (tissue_type=colon,
cell_line=RCB-0549 Cle-H3), (tissue_type=kldney,
cell_line=RCL-142 RAG), (tissue_type=submandibular gland,
cell_line=RCL-173 RAG), (tissue_type=submandibular gland,
cell_line=RCL-174 RAG), (tissue_type=submandibular gland,
                                                                                                                                                                                                                                                                                                                                                                       FIXEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. . 10 (11), 1757-1771 (2000) Konno, H., Fukunishi, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara, Y. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
Email: genome_resegsc.riken.go.jp,
URL:http://genome_gsc.riken.go.jp,
Carninci.P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh
Carninci.P., Shibata,Y., Hayatsu,N., and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1617-1630 (2000)
wagi.K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,
Watchiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura
Hayashizaki,Y. Maramatsu,M., Inoue,Y., Kira,A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οį
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      encyclopedia: real-time sequence clustering for construction of nonredundant cDNA library. Genome Res. . 11 (2), 281-289 (2001) Please Visit our web site (http://genome.gsc.riken.go.jp) for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:10090"
/clone="6431005N18"
/clone_lib="RIKEN full-length enriched, colon RCB-0549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ), (strain=C3H, tissue_type=brain, cell_line=CRL-1443
BC3H1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       214 ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCAGGAGGCGGGCCCGGGCAGGGGTGTG 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37 Argreatgertragrescercerserreceaagresarcasaacaserresses 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 10; Length 618;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 GAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAAC 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Computer-based methods for the mouse full-length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              49; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 199.2; DB 1.
Pred. No. 3.4e-39;
0; Mismatches 49.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               e mouse tissues.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   196 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63.4%;
82.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         сте-нз
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best_Local Similarity
Matches 241; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       105 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
```

```
Unpublished (2001)
Contact: Yoshinide Hayashizaki
Laboratory for Genome Exploration Research Group, RIKEN Genomic
Sciences Center(GSC), Yokohama Institute
Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suchino-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-9216
Email: genome-resegsc.riken.go.jp,
URL: http://genome-gsc.riken.go.jp,
WR.: http://genome-gsc.riken.go.jp,
URL: http://genome-gsc.riken.go.jp,
WR.: http://genome-gsc.riken.go.jp,
URL: http://genome-gsc.riken.go.jp,
WR.: http://genome-gsc.riken.go.jp,
WR.: http://genome-gsc.riken.go.jp,
Wagahi.K., Fullwake,S., Inoue,K., Tgawa,M., Ohara,E.,
Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., Okazaki,Y.,
WRIEN integrated sequence analysis (RISA) system-384-format
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases I to 631)

Akimura, T., Arakawa, T., Carninci, P., Furuno, M., Hanagaki, T., Hayatsu, N., Hiramoto, K., Hiraoka, T., Hirozane, T., Imotani, K., Ishii, Y., Tto, M., Kawai, J., Kojina, Y., Kondo, M., Matsuyana, T., Yakamura, M., Nishi, K., Nomura, K., Numasaki, R., Okazaki, Y., Okido, T., Saito, R., Sakai, C., Sakai, K., Sakazume, N., Sasaki, D., Sato, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Suzuki, H., Tagawa, A., Takahashi, F., Takaku-Ashira, S., Tanakaya, T., Tomaru, T., Towaru, Takahashi, F., Watahiki, A., Yasauishi, A., Muramatsu, M. and Hayashizaki, Y. RIKEN Encyclopedia of Mouse Full-length cDNAs (Akimura, T., et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note=_pooled cell lines; (cell_line=CRL-1751 WEHI 164), (cell_line=CRL-2116 JC), (cell_line=RCB-0035 WEHI-3), (cell_line=RCB-0545 OHTA), (cell_line=RCB-0545 OHTA), (cell_line=RCB-1283 B16 melanoma), (cell_type=B cells, cell_line=CRL-1702 WEHI 231 ), (cell_type=Leydig cells, cell_line=CRL-2065 MITC-1), (cell_type=Nullipotent stem cell, cell_line=CRL-2070 NE),
                                                                                                                                                                                                                                                                                BB866451 RIKEN full-length enriched, colon RCB-0549 Cle-H3 cDNA Musmusculus cDNA clone G431005J18 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000)
Konno, H., Fukunishi, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara, Y. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   encyclopedia: real-time sequence clustering for construction of nonredundant cDNA library. Genome Res. . 11 (2), 281-289 (2001) Please visit our web site (http://genome.gsc.riken.go.jp) for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="RIKEN full-length enriched, colon RCB-0549
274 GAGCTGGGGCTGCGGTCAGTGGCCTTGGGGTTTGACGACACTGAGGTGACCAC 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Computer-based methods for the mouse full-length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="colon"
/cell_line="RCB-0549 Cle-H3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Mus musculus"
/db_xref="taxon:10090"
/clone="G431005J18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1..631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BB866451.1 GI:17112661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cle-H3 cDNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e mouse tissues.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                house mouse.
```

```
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         house mouse.
                                                                                                                                                                              ď
                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
BG916212
                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                           ò
              (tissue_type=bone marrow, cell_type=stroma cell,
cell_line= CRL-2028 SR-4987), (tissue_type=colon,
cell_line=CRD-142 RAG), (tissue_type=ridney,
cell_line=CRL-1734 SCA-9 clone 15), (strain=BALB/C,
cell_line=CRL-1734 SCA-9 clone 15), (strain=BALB/C,
cell_type=B cells, cell_line=CRL-1669 BCLI Clone 13.20-3B3
), (strain=C3H, tissue_type=brain, cell_line=CRL-1443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (12-ARR-2000)
This sequence is a single read and was generated as part of a large
scale clone-end sequencing project of the Tetraodon nigroviridis
genome. For more information, please take a look at
                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSS 15-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CNSO2STX 1011 bp DNA linear GSS 15-MAY-2000 Tetraodon nigroviridis genome survey sequence PUC-Ori end of clone 162F16 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GSS; genome survey sequence.

Tetraodon nigroviridis.

Tetraodon nigroviridis

Tetraodon nigroviridis

Tetraodon nigroviridis

Bukaryota; Metacoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;

Actinopterygii; Neopterygii; Percomorpha; Tetraodontiformes;

Tetraodontidae; Tetraodon.

1 (bases 1 to 1011)

Rosst Crollius, H., Jaillon, O., Dasilva, C., Bouneau, L., Fisher, C.,

Bernot, A., Fizames, C., Wincker, P., Brottier, P., Quetier, F.,

Saurin, W. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human gene number estimate provided by genome wide analysis using Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Roest-Crollius, H., Jaillon, O., Dasilva, C., Fizames, C., Fisher, C., Bouneau, L., Billault, A., Quetier, F., Saurin, W., Bernot, A. and Weissenbach, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                             121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                       61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                       3; Gaps
                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                37 ATGICATGGTTTAGTGGCCTCCTGCTTCCCACAGTGGATGAACGGAAAACAGCTTGGGGG 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGGAAAACAGCCTGGGGT
(tissue_type=bladder, cell_line=RCB-0544 MBT-2),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAAC 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 180; DB 10; Length 631;
Pred. No. 1.9e-34;
0; Mismatches 61; Indels
                                                                                                                                                                          150 t
                                                                                                                                                                        174 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL212334.1 GI:7871153
                                                                                                                                                                                                                               Query Match 57.3%;
Best Local Similarity 78.2%;
Matches 229; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 1011)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 1011)
                                                                                                                                                                        217 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoscope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sednence.
                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CNS02STX/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                     δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
```

```
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG916212 941 bp mRNA linear EST 05-JUN-2001 602814927F1 NCI_CGAP_Mam4 Mus musculus cDNA clone IMAGE:4937095 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 94).
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Onpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
http://image.llnl.gov
High quality sequence stop: 151.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      183 ATGTCCTGGTTCAGTGGTTTCCTAGTGGCCAGAGTGGACGACGAAAGAGCGCCTGGGGG 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            223 GAGCGCAATGGCAAGAAGCCCAACCGGAAGGGAGGCTCGTCTC-----TCTGCAAC 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         172 CCCCGTWACATGAGCTGCCTGCGGGACCCCGACGCCATGGAGCCCCCCTCCGGAGCGCCC 113
                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                          /organism="retraodon nigroviridis"
/db_xref="taxon:99883"
/db_xref="taxon:99883"
/clone="162F16"
/clone="lib="Genoscope sequence ID : COAG162DC08SP1-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGA-GCCACCCCAGCCCCCACCCTGCGGGCCC
                                                                                                                                                                                                                                                                                                                                  Score 60.2; DB 17; Length 1011;
Pred. No. 9.1e-05;
1; Mismatches 64; Indels 10;
                                                                                                                                                                                                                                                        24 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="NCI_CGAP_Mam4"
//tissue_type="tumor, gross tissue"
dev_stage="5 months"
/lab_host="DH108"
http://www.genoscope.cns.fr/Tetraodon.
Location/Qualifiers
                                                                                                                                                                                                                                                        u
                                                                                                                                                                                                                                                        175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .941
/organism="Mus musculus"
/strain="NARI"
/db_xref="taxon:10090"
/clone="IMAGE:4937095"
                                                                                                                                                                                                                                                        324 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180 CCCTCGGTGCCCTGGCAGGATG 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG916212.1 GI:14296688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112 CTCCATCAGCACCACCGCGGAGG
                                                                                                                                                                                                                                                                                                                                           19.2%;
63.1%;
                                                                                                                                                                                                                                                     297 c
                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 63.1
Matches 128; Conservative
                                                                                                                                                                                                                           PUC-Ori"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
BG916212
```

94 GGCACTCGGGCCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAG 153

```
Why is the control of this BAC-end sequence was carried out as part of a collaboration with the Berkeley Drosophila Genome Project (BDGP). The BDGP is constructing a physical map of the prosophila concaration with the Berkeley Drosophila Genome Project (BDGP). The BDGP is constructing a physical map of the brosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, Nr. The library is named RPC1-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the isogenic strain v2; cn bw sp. the same strain used for the BDGP's Pl and EST libraries. A more detailed description of the library and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be found at http://www.iffice.
Library constructed by Life Technologies. Investigators providing samples: Lothar Hennishausen/Priscilla Furth, NIH Reference for transgenic model: Li et al., Cell Growth and Differentiation 7, 3-11 (1996)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CNSO091P 925 bp DNA linear GSS 03-JUN-1999 Drosophila melanogaster genome survey sequence TET3 end of BAC # BACR19D16 of RPCI-98 library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                    .
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                               12 ATGTCATGGTTGAGAGGGCTCCTGGATTCCCAAACGTGGATGAACGGAAAACACGCTTGGG 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93
                                                                                                                                                                                                                                                                                                   1 ATGICATGGTITAGTGGCCTCCTGG--TCCCTAAAGTGGATGAACGGAAAACAGCCTGGG 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34 GTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGGCAGAAGCGTTCGCGGCGCCGT
                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                       18.7%; Score 58.8; DB 13; Length 941; 84.8%; Pred. No. 0.0002; ive 0; Mismatches 12; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/clone="BACR19D16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16.4%; Score 51.4; DB 17;
larity 15.8%; Pred. No. 0.013;
Conservative 126; Mismatches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGAACGCAATGGGCAGAAGCGTTCGCGGCGC 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fly), genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="RPCI-98"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="end : TET3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AL053013.1 GI:4934461 GSS.
                                                                                                                                                                                                                                            78; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genoscobe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44;
                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
CNS0091P/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                            SASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                807
                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                          59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
GSS 26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission Submitted (23-JUL-1999) Genoscope - Centre National de Sequencage : Bp 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr )

When : www.genoscope.cns.fr)
Determination of this BAC-end sequence was carried out as part of a collaboration with the European Drosophila Genome Project (EDGP) - http://www.edgp.ebi.ac.uk - This Drosophila melanogaster BAC library (Dros BAC) was made by Alain Billaud at CEPH (Centre d'Etude du Polymorphisme Humain) with funding provided by a MRC and project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster genome survey sequence SP6 end of BAC BARCNOSP19 of DrosBAC library from Drosophila melanogaster (fruit fly), genomic survey sequence.
AL09882
                                                                                                                                       627 GBSMSSGGGGSGSVSASSGMSSSVSSGGRSSGSGGGGVGGSGSSSGGGSGSGSS 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56 GGGGTGAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCT 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila; to 1009)
                                                                                                                  214 CGGAGGGGCGCCCCANGCAAGGCAAGGAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116 GCACGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGG
                                      154 CCACCCAGCCCCACCCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATC
                                                            176 GCCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGCGCCCCANGCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 17; Length 1009;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    236 GCAAGGAACTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAAGATACCG 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243 others
                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98;
                                                                                                                                                                                                                     274 GAAGATACCGAAGTGACAACGACACGGCGGGGACCGCT 311
                                                                                                                                                                                                                                                                                                                                    DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16.1%; Score 50.4; 32.0%; Pred. No. 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Drosophila m
/db_xref="taxon:7227"
/clone="BACN03P19"
/clone_lib="DrosBAC"
                                                                                                                                                                                                                                                                                                                                    1009 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /plasmid="pBeloBAC11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                 AL098882.1 GI:5610493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="end:
1 377 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pBeloBAC11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genoscope
                                                                                                                                                                                                                                                                                                                                    CNS010EW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                              RESULT 6
CNS010EW/c
                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                    LOCUS
g
                                                                            g
                                                                                                                                                     q
                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δλ
                                      Qγ
                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
```

DEFINITION

RESULT 7 CNS010RJ ACCESSION

VERSION KEYWORDS

ORGANISM

REFERENCE

AUTHORS

TITLE

JOURNAL

COMMENT

of a

```
Web: www.genoscope.cns.fr.n.
Determination of this pAC-end sequence was carried out as part of a collaboration with the Berkeley prosophila Genome Project (BDGP). The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC inbrary was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the isogenic strain y2; on bw sp, the same strain used for the BDGP's land bow to order individual BAC clones, the entire library or filters for hybridization from the BACPAC Resource Center can be found at http://bacpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BQ948546 4681400 Lupski_sciatic_nerve Homo sapiens cDNA clone IMAGE:6199251 5', mRNA sequence.
                                                                                                                                                                                                                                                                    Direct Submission
Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage :
BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52 GCCTGGGGTGAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGC 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          687 SGCCCCSSGCSCCCCCGCGCGSCGGSCCGCGCSCSGGCSSCGCSCCCSCCCSCCCSCCCS 746
                                                                                                                        Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 932)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112 TTCTGCACGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          172 GCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCANGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 17; Length 932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    243 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.7%; bcc. 32.7%; 72.7%; Pred. No. 1...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        807 SSSGSSCGGSGCSSGCSSGGSSGCCSSGGGCC 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            232 AAGGCCAAGGAACTGGGGCTGCGGGCAGTGGCCC 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    91
          genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone_lib="RPCI-98"
/note="end : T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="BACR14B09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                      Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:22364024
                                                   AL066742.1 GI:4945205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    202 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 32.7 hes 70; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BQ948546.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ø
                                                                                                                                                                                                                                                Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Loca
Matches
                              ACCESSION
                                                     VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BO948546
                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of a
                                                                                                                                                    26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS 03-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://www.edgp.ebi.ac.uk - This Drosophila melanogaster BAC library (Dros BAC) was made by Alain Billaud at CEPH (Centre dibracy expense of Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (23-JUL-1999) Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr
                                                                                                                                                 CNSOLORJ
DNA linear GSS 26-JUL-19
Drosophila melanogaster genome survey sequence T7 end of BAC
BACNO4N13 of DrosBAC library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (EDGP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CNS0072Q 932 bp DNA linear GSS 03-JUN-19
Drosophila melanogaster genome survey sequence T7 end of BAC #
BACR14B09 of RPCI-98 library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89 GCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTGCCTCCGGGATG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              684 AVAASSASSSSSSYSVVSSSSAVAAVAVSASSACSASSASSSSSSSS 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           624 SSSASSASSSSSSSSAAASAAGASSVSSASSAVSSSSSSASAASSSASASVSSSSSVS 683
                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae, Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29 CIAAAGIGGAIGAACGGAAAACAGCCIGGGGIGAACGCAAIGGGCAGAAGCGIICGCGGC 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               149 CAGAGCCACCCACCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 209 TCATCCGGAGGGCGCCCCANGCAAGGGAAGTGGGGGTGCGGGCAGTGGCCCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 846;
284 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          melanogaster"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13.8%; Score 43.4; DB 17;
ilarity 14.4%; Pred. No. 1.2;
Conservative 127; Mismatches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTCGAAGATACCGAAGTGACAACGACACCGGCGGGA 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSSSSSTSASSASAAAASAVASSSSSGSASSSAGA 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            175 t
                                                                                                                                                                                               fly), genomic survey sequence. AL099337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism~"Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:7227"
/clone="BACN04N13"
/clone_lib="DrosBAC"
/plasmid="pBeloBAC11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         40 g
                                                                                                                                                                                                                                                                                                                Drosophila melanogaster.
                                                                                                                                                                                                                                                                  AL099337.1 GI:5610948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47 C
                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 846)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pBeloBAC11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40;
                                                                                                                                                                                                                                                                                              GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
```

Local

Matches

q ò 염 δy g ŏ g

à

DEFINITION

RESULT 8 CNS0072Q

569

ŏ

804

g

BASE COUNT ORIGIN

FEATURES

ö

171

ဖ

```
5'-TCGACCCCACGCGTCCG-3' and 'Composition' of the property of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BQ892531 778 bp mRNA linear EST 16-AUG-2002 AGENCOURT_8715503 NIH_MGC_101 Homo sapiens cDNA clone IMAGE:6425957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 778)
NHT-MCC http://mgc.ncl.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Vector: pCMV-SPORT6 (Life Technologies); Site_1: NotI; Site_2: SalI; cDNA made by oligo-dr priming. Directionally cloned using the following adaptors:
                                                                                                                                                                                      Email: cgapbs-rémail.nih.gov
Tissue Procurement: Dr. James R. Lupski
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
http://image.llnl.gov
Location/Counitiers
1 (bases 1 to 950)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79 CGTTCGCGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGGCTATATGAGCTGC 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   139 CTCCGGGATGCAGAGCCACCCAGCCCACCCTGGGGGCCCCCTCGGTGCCCCTGGCAG 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              608 AGGGGGGATGTNCTTCCCCCCNCCCCCCCGGGCCCCCTTTTNCCCCGGGCN 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548 CATTCGCCGTGCCTCGCGAGCAGGGGGTGTGTGGGTCCTCCACCCTCCTCTTTGGGGTTA 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 43; DB 14; Length 950;
Pred. No. 1.6;
0; Mismatches 56; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .950
/organism="Homo sapiens"
/db_xxef="taxon:9606"
/clone="InAGE:6199251"
/clone=lib="Lupski_sciatic_nerve"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="sciatic nerve"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       212 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /dev_stage="adult, 70 yr"
/lab_host="DH108"
                                                                                                                  Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              294 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5', mRNA sequence.
BQ892531
BQ892531.1 GI:22284558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 13.7%;
Best Local Similarity 56.6%;
Matches 73; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       226 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 668 AANGAGGCC 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGACGCC 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
BQ892531/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
COMMENT
                                                                                                                  JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                TITLE
                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
925 bp DNA linear GSS 03-JUN-1999 Drosophila melanogaster genome survey sequence TET3 end of BAC # BACR19D16 of RPCI-98 library from Drosophila melanogaster (fruit fly), genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="epidermoid carcinoma, cell line"
/lab_host="NH10B (phage-resistant)"
/note="Corgan: lung; Vector: poTB7; Site_1: EcoRI; Site_2:
%hots cDNgan: lung; Vector: poTB7; Site_1: EcoRI; Site_2:
%hots cDNgan: lung; Vector: poTB7; Site_1: CDNgan: lung; Vector: poTB7; Site_1: EcoRI; Site_2: Motor: cDNgan: lung; Vector: potential po
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genoscope.

Direct Submission

Burnett Submission

Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage :

BP 191 91006 EVRY cedex - FRANCE (E-mail : seqref@genoscope.cns.fr

- Web : www.genoscope.cns.fr)

Determination of this BAC-end sequence was carried out as part of a cellaboration with the Berkeley brosophila Genome Project (BDGP).

The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Manmoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo,
                                CDNA Library Preparation: Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://mage-llnl.gov
Plate: LLCM2608 row: j column: 06
High quality sequence stop: 481.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 CGCCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGGCC 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179 CCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCANGCAAGGGCA 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster.
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        239 AGGAACTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGAC 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ch 13.5%; Score 42.4; DB 14; Length 778; I Similarity 51.1%; Pred. No. 2.1; 91; Conservative 0; Mismatches 87; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:6425957"
/clone_lib="NIH_MGC_101"
                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
Pissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AL053013.1 GI:4934461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CNS0091P
                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
```

```
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoscope
                                                                                                                                                         Local St.
73;
                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                               SASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 13
CNS006XK
                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Web: www.genoscope.ors.fr)
Determination of this BAC-end sequence was carried out as part of a collaboration with the European Drosophila Genome Project (EPGP) - http://www.edgp.ebi.ac.uk - This Drosophila melanogaster BAC library (Dros BAC) was made by Alain Billaud at CEPH (Centre d'Etude du Polymorphisme Humain) with funding provided by a MRC project grant. The DNA was prepared from embryos by Alain Bucheton and Genevieve Payan. It has been constructed in the vector
                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSS 26-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (23-JUL-1999) Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr
NY. The library is named RPCI-98 and was constructed by partial EcoRI digestion of Drosophila DNA provided by the BDGP from the isogenic strain y2; on bw sp, the same strain used for the BDGP's Pl and EST libraries. A more dettailed description of the library and how to order individual BAC clones, the entire library, or filters for hybridization from the BACPAC Resource Center can be found at http://bacpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster genome survey sequence 17 end of BAC BACN03J03 of DrosBAC library from Drosophila melanogaster (fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74 AGAAGCGTTCGCGCCCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCCGCTATATGA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            134 GCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCTCGGTGCCCCT 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 748 SSSSXSSTCSCCTCCCSYSYSSTSSSSTSWGSTSGSSSSVGTSSSSDSTSTCCCC 007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   194 GGCAGGATGACGCCTTCATCCGGAGGGCGGCCCCANGCAAGGGCAAGGAACTGGGGCTGC 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                          14 GIGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGGC 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster
Eukaryota, Metazoa, Arthropoda, Hexapoda, Insecta, Pterygota,
Neoptera, Endopterygota, Diptera, Brachycera, Muscomorpha,
Ephydroidea, Drosophilidae, Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         254 GGCCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGGGGGGCCGC 310
                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 925;
                                                                                                                                                                                                                                                                511 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                  /organ1sm="Drosophila melanogaster"
/db_xref="taxon:7227"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Drosophila melanogaster"
                                                                                                                                                                                                                                                                                                                                                        Conservative 146; Mismatches 120;
                                                                                                                                                                                                                                                                                                                       DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                u
                                                                                                                                                                                                                                                                                                                     Score 42.4; Di
Pred. No. 2.2;
                                                                                                                                                                                                                                                              172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1065 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fly), genomic survey sequence. AL098662
                                                                                                                                                                                                      /clone="BACR19D16"
/clone_lib="RPCI-98"
/note="end : TET3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                61 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AL098662.1 GI:5610273
                                                                                                                                                                                                                                                                                                                    13.5%;
10.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 1065)
                                                                                                                                                                                                                                                            61 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                     1. .925
                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CNS0108S
                                                                                                                                                                                                                                                                                                                                                        31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSS.
                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
CNS0108S/C
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

```
Determination of this BAC-end sequence was carried out as part of a collaboration of this BAC-end sequence was carried out as part of a collaboration with the Berkeley prosophila Genome Project (BDGP). The BDGP is constructing a physical map of the Drosophila melanogaster genome using these BACs. For further information please see http://www.fruitfly.org The BDGP Drosophila melanogaster BAC library was prepared by Kazutoyo Osoegawa and Aaron Mammoser in Pieter de Jong's laboratory in the Department of Cancer Genetics at the Roswell Park Cancer Institute in Buffalo, NY. The library is named RPCI-98 and was constructed by partial ECORI disection of Drosophila DNA provided by the BDGP from the isogenic strain v2: on bw sp, the same strain used for the BDGP's pl and BST libraries. A more detailed description of the library filters for hybridization from the BACPAC Resource Center can be found at http://bacpac.med.buffalo.edu/drosophila_bac.htm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster genome survey sequence T7 end of BAC # BACR14N09 of RPCI-98 library from Drosophila melanogaster (fruit ALO66051
                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (02-JUN-1999) Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - FRANCE (E-mail : segrefégenoscope.cns.fr
                                                                                                                                                                                                                                                                                                                                                                    968 AAKGVCCSMCYCSSCCCCCCCCCCCCCCCCCCCCCCCCCCCCCSSCCCCSSCCAMSGG 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75 GAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAG 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                    135 CTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCCCCTCGGTGCCCCTG 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195 GCAGGATGACGCCTTCATCCGGAGGGCGGCCCANGCAAGGGCAAGGAACTGGGGCTGCG 254
                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster.
Drosophila melanogaster
Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
1 (bases 1 to 935)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCAGTGGCCCTGGGCTTCGAAGATACCGAAGTGACAACGACACCGGCGGGGCGCCTG
                                                                                                                                                                                                         Length 1065;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  others
                                                                                                                     154 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Drosophila melanogaster"
/db_xref="taxon:7227"
/clone="BACR14N09"
                                                                                                                                                                                                            DB 17;
                                                                                                                     ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ų
                                                                                                                                                                                                         13.5%; Score 42.4; D 30.7%; Pred. No. 2.3;
                                                                                                                                                                                                                                                                    58; Mismatches
                                                                                                                     313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
/clone="BACN03J03"
/clone_lib="DrosBAC"
/plasmid="pBeloBAC11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="RPCI-98"
                                                                                                                  252 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="end : T7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AL066051.1 GI:4945019
                                                                                      /note="end
                                                                                                                     225 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              170 c
                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                        Similarity
```

us-09-750-240-1.rst

202

```
203 ACGCCTTCATCCGGAGGGGCGGCCCANGCAAGGCAAAGGAACTGGGGGCTGCGGGCAGTGG 262
                                                                                                                                               GGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCTCGGTGCCCCTGGCATG
                                                                                                                                                                                 263 CCCTGGGCTTCGAAGATACCGAAGTGACAACGACACC 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55
                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                 143
                                                                                                                                                                                                                 916
                                                                                                                                                                                                                                                                RESULT 15
AG073983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                LOCUS
                 a
                                               δ
                                                                              g
                                                                                                              ò
                                                                                                                                           g
                                                                                                                                                                                 ò
                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (02-A0G-2001) Asao Fujiyama, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suchiro-chou, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:chimpbes@gsc.riken.go.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170) Clones are derived from the chimpanzee BAC library PTB This BAC end was generated during the R&D process and may have higher chance of
                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pan troglodytes male lymphoblast DNA, clone_lib:PTB Chimpanzee Male BAC Library clone:PTB-003A16.F.
Pan troglodytes
                                                                                                                                                                                                                                                                                                                                                                                              GSS 01-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                  AGU3U603 968 bp DNA linear GSS 01-NOV-200:
Pan troglodytes DNA, clone: PTB-003A16.F, genomic survey sequence.
AG030603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Pan.
                                                                              83 CGCGGCGCCGTGGCACTCGGCCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTGCCTCC 142
                                                                                                                                             143 GGGATGCAGAGCCACCCCACCCCTGCGGCCCCCCTCGGTGCCCCTGGCAGGATG 202
                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                  ACGCCTTCATCCGGAGGGGGGCGCCCANGCAAGGCAAGGAACTGGGGGCTGCGGGCAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fujiyama, A., Hattori, M., Toyoda, A., Taylor, T.D., Yada, T., Totoki, Y., Watanabe, H. and Sakaki, Y.
BAC end sequences of Library PTB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fuliyama,A., Hattori,M., Toyoda,A., Taylor,T.D., Yada,T.,
Totoki,Y., Watanabe,H. and Sakaki,Y.
Direct Submission
                                                 ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                 Length 935;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 17; Length 968;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cell_type="lymphoblast"
/clone_lib="PTB Chimpanzee Male BAC Library"
1 361 c 474 g 16 t 77 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 41.8; DB 17;
Pred. No. 3.2;
0; Mismatches 111;
                 DB 17;
                                              73;
             13.3%; Score 41.8; Dilarity 36.7%; Pred. No. 3.2; Conservative 45; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Pan troglodytes"
/db_xref="taxon:9598"
/clone="PTB-003A16.F"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
1..968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vector : pKS145
R.Site 1 : SacI
R.Site 2 : SacI.
                                                                                                                                                                                                                                                                                                                                                                                                                                          AG030603.1 GI:16557476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequencing: -21M13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tracking errors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 13.3%;
Best Local Similarity 48.8%;
Matches 106; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 968)
        Query Match
Best Local Similarity
Matches 69; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                             263 CCCTGGGC 270
                                                                                                                                                                                                                                                                                                  | : | |:
| : | |:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LIBRARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                            203
                                                                                                                                                                                                                                                                                                            861
                                                                                                                                                                                                                                                                                                                                                          RESULT 14
AG030603
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                         엄
                                                                                                           a
                                                                                                                                                                            g
                                                                                                                                                                                                                                                                             ö
                                                                                                                                             ò
                                                                                                                                                                                                            á
```

83 CGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTGCCTCC 142

õ

```
Pan troglodytes male lymphoblast DNA, clone_lib:PTB Chimpanzee Male BAC Library clone:PTB-065P04.F.
Pan troglodytes
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostom1;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (02-AUG-2001) Asao Fujiyama, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (6SC);
1-7-22 Suchiro-Chou, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:chimpbes@sc.riken.go.jp, URL:http://hgp.gsc.riken.go.jp/, Tel:s18-145-503-9111, Fax:81-45-503-9170)
Clones are derived from the chimpanzee BAC library PTB This BAC end was generated during the R&D process and may have higher chance of
                                                                                                                                                           AG073983 1075 bp DNA linear GSS 03-NOV-2001
Pan troglodytes DNA, clone: PTB-065P04.F, genomic survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78 GCGTTCGCGCCCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTG 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589 gegeocidedececidedesecidedecidesecidesecidesecidesecidesecidesecidesecidesecidesecidesecidesecidesecidesec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       138 CCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCCCCTCGGTGCCCCTGGCA 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 (bases I to 1075)
Fujiyama,A., Hattori,M., Toyoda,A., Taylor,T.D., Yada,T.,
Totoki,Y., Watanabe,H. and Sakaki,Y.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fujiyama, A., Hattori, M., Toyoda, A., Taylor, T.D., Yada, T., Totoki, Y., Watanabe, H. and Sakaki, Y.
BAC end sequences of Library PTB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 17; Length 1075;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cell_type="lymphoblast"
/clone_lib="PTB Chimpanzee Male BAC Library"
388 c 553 g 18 t 61 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 41.4; DB 17; Length:
Pred. No. 4.1;
0; Mismatches 122; Indels
CGCGCGCGCGGNGAGCGCGGAGGACGAAAAC 952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Pan troglodytes"
/db_xref="taxon:9598"
/clone="PTB-065P04.F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      553 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : pKS145
                                                                                                                                                                                                                                                       AG073983.1 GI:16625785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequencing: -21M13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tracking errors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Vector : pKS14
R.Site 1 : SacI
R.Site 2 : SacI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 13.2%;
Best Local Similarity 47.6%;
Matches 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

- Qy Dp
- 9 9

Search completed: March 1, 2003, 03:51:56 Job time: 307.884 secs

			.•		
					**
	g to make the graph of the common the stage				
€ 					
				· · ·	
			٠		

```
M96653 Mus musculu
U72848 Fugu rubrip
AC126672 Mus muscu
AC098456 Rattus no
AF07709 Streptomy
AL445945 Streptomy
AC097157 Rattus no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J02200 Herpes simp
AP157643 Mycobacte
AC099455 Rattus no
AC090051 Homo sapi
AL442109 Oryza sat
AL662984 Oryza sat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC115355 Mus muscu
AC091123 Oryza sat
AP002348 Oryza sat
AP002843 Oryza sat
AE006014 Caulobact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC074028 Mus muscu
L01115 Rattus norv
AC129405 Rattus no
AC096835 Rattus no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AB007882 Homo sapi
AF250226 Homo sapi
AC021647 Homo sapi
AC117498 Homo sapi
AC02557 Homo sapi
M9468 Camis famil
129958 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          V00462 Herpes simp
AF288483 Azospiril
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M96160 Rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               L36825 Mus Musculu
                                                                                                                                                                                                                                                                                                                                                                          AR174471 Sequence
AX189757 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX305965 Sequence
                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AL662976
AE005839
AL646064 B
                                                                                                                                                                                                                                                                                                                                                                                                                                         AX189766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC074028
RATADC
AC129405
AC096835
MUSADNLCYC
U72484
                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC126672
AC098456_0
AF072709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC025557
DOGADENCYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MUSALCR01
AC115355
AC091123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX305965
MUSADCYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HEHS03
AF288483
HS11EM5G
AF157643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF250226
AC021647
AC117498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AR106659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC097157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AP002843
                                                                                                                                                                                                                                                                                                                                                                                                                                         AX189766
                                                                                                                                                                             em_htgo_mus:*
em_htgo_other:*
                                                  em_htg_other:*
em_vi:*
em_htg_hum:*
                                                                                                                                                               em_htgo_hum: *
                                   em_htg_inv:*
                                                                 em_htg_mus:*
                                                                                  em_htg_pln:*
em_htg_rod:*
                                                                                                              em_htg_mam:*
                                                                                                                                 em_htg_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10
                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                       99.6

99.6

314

99.6

314

95.6

352

95.6

352

95.6

352

95.6

352

95.6

352

95.6

352

96.3

96.3

96.3

96.3

96.3

97.4

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96.3

96
                                                                                                                                                                                                                                                                                                                          Query
Match Length
                                                                                                                                                  em_sy
 100
100
99.5
99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98.5
98.5
98.5
98
                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               105.5
103.5
103.5
103.
103
103
                                                                                                                                                                                                                                                                                                                           Result
                                                                                                                                                                                                                                                                                                                                                                                                                                          00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -MODEL-frame+_p2n.model -DEV-xlh
-WODEL-frame+_p2n.model -DEV-xlh
-Q-Cogn2_1/102F0C_spool/T039750240/runat_255022003_103941_24963/app_query.fasta_1.263
-Q-Cogn2_1/102F0C_spool/T039750240/runat_255022003_103941_24963/app_query.fasta_1.263
-UNITS-bits -START-1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-UNITS-bits -START-1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-UNITS-bits -START-1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45
-UNITS-bits -START-1 -END=-1 - MATRIX=blosum62 -TRANS=500000000
-USER=US09750240_@CGN_1_11616_@runat_25022003_103941_24963 -NCPU=6 -ICPU=3
-NO_XMLPX - NO_XMAP - LARREDORRY -NGC_SCORES=0 -WAIT -LONGING -DEV_TIMEOUT=120
-WARN_INEXOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPEXT=7
-YGAPOP=10 -YGAPEXT=0.5 -DELEXT=7
                                                                                                         March 1, 2003, 04:06:12 ; Search time 2156 Seconds
   (without alignments)
   1403.846 Million cell updates/sec
                                                                                                                                                                                          570
1 MSWFSGLLVPKVDERKTAWG.....RAVALGFEDTEVTTPAGPL 104
                                                                                                                                                                                                                                                                                                                                                                          4109280
                                 Compugen Ltd
                                                                             OM protein - nucleic search, using frame_plus_p2n model
             GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compuc
                                                                                                                                                                                                                                                                                                                                         2054640 seqs, 14551402878 residues
                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                        Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenEmbl:*

1: 9b ba:*
2: 9b-htg:*
3: 9b-in:*
1: 9b-om:*
9b-ow:*
9b-ph:*
9b-ph:*
                                                                                                                                                                           us-09-750-240-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_sts:*
gb_sts:*
gb_sy:*
gb_un:*
gb_vi:*
em_ba:*
em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_ov:*
em_pat:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_in:*
em_mu:*
em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_or:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Command line parameters:
                                                                                                                                                                                                                                           BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jatabase :
                                                                                                                                                                                                           sequence:
                                                                                                              on:
```

Mouse adeny

Sequence Sequence Sequence Sequence Oryza sat Caulobact

Ralstonia

ALIGNMENTS

RESULT

em_pl:*
em_ro:*
em_sts:*
em_un:*

*: ud_ma

u

47

~

```
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ಥ
  ď
 9
                                                                                                                                                                                                                                                                                                                                                                                                                                  Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                             Unknown
                             Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match:
                                       Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .. ON ..
                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
FEATURES
                              Alignment
                                                                                                                                                                                                                                                                                     81
                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                RESULT 3
AR174473
                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
           ORIGIN
                                                  Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score:
                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
                                                                                                                              δ
                                                                                                                                               qq
                                                                                                                                                                   δý
                                                                                                                                                                                    q
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                         à
                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
          PAT 17-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAT 08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia: Eutheria; Primates; Catarrhini; Hominidae; Homo.
I (bases 1 to 31)
Hammond, H.K. and Gao, M.
Gene therapy for congestive heart failure
Patent: WO 0148164-A 1 05-Jul-2001;
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (US)
                                                                                                                                                                                                                                                                                                                        GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                  41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                and Gao, M.
                                                                                                                                                         others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
           linear
                                                                                               Post, S.R.
                                                                                                                                                                                               314
104
0
0
0
                                                                                    1 (bases 1 to 314)
Hammond, H.Kirk., Insel, P.A., Ping, P., Post
Gene therapy for congestive heart failure
Patent: US 6306330-A 1 23-0CT-2001;
Location/Qualifiers
                                                                                                                                                                                                                 Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
           DNA
                                                                                                                                                                                               Length:
Matches:
                                                                                                                                                         47
         AR174471 314 bp
Sequence 1 from patent US 6306830.
AR174471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1 from Patent W00148164. AX189757

    .314
    /organism="Homo sapiens"
/db_xref="taxon:9606"

                                                                                                                                                                                                                                                                 (1-314)
                                                                                                                                 1..314
/organism="unknown"
A 98 c 108 g
                                     AR174471.1 GI:17914791
                                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x AR174471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX189757.1 GI:15143133
                                                                                                                                                                                           3.27e-29
568.00
100.008
100.008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlaGlyProLeu 104
                                                                            Unclassified
                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                         ø
                                                        Unknown
                                                                    Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                     Alignment Scores:
                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
         LOCUS
DEFINITION
                          ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                               Pred. No.:
                                                                                             AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 2
AX189757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EATURES
                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                        Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
PAT 17-DEC-2001
                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                     GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                             80
                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40
                                                                                                                                   GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                              ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys
                                                                                                                                                                                                                     41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 3549)
Hammond, H. Kirk., Insel, P.A., Ping, P., Post, S.R. and Gao, M. Gene therapy for congestive heart failure
Patent: US 5306830-A 5 23-007-2001;
Location/Qualifiers
 others
                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3549
99
0
3
0
                                        314
104
0
0
0
                                        Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 764
                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                          AR174473 3549 bp
Sequence 5 from patent US 6306830.
AR174473 AR174473.1 GI:17914793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels:
                                                                                            Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-750-240-2 (1-104) x AR174473 (1-3549)
                                                                                                               US-09-750-240-2 (1-104) x AX189757 (1-314)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="unknown"
1025 c 1061 g
 р
108
                                        3.27e-29
568.00
100.00%
100.00%
99.65%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8.64e-27
545.00
97.06%
97.06%
95.61%
 ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .3549
98
                                                                                                                                                                                                                                                                                                                                                         GCGGGACCGCTG 312
                                                                                                                                                                                                                                                                                                                                               101 AlaGlyProLeu 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ó
```

us-09-750-240-2.rge

Db 301 GGCGGG 306	RESULT 5 AX189766 LOCUS LOCUS DEFINITION Sequence 10 from Patent WO0148164. ACCESSION AX189766.1 GI:15143139	NEFRONDS . SOURCE human. ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. REFERENCE 1 (bases 1 to 3552) AUTHORS Hammond, H.K. and Gao, M. TITLE Gene therapy for congestive heart failure JOURNAL Patent: WO 0148164-A 10 05-JUL-2001;	e ce	Alignment Scores: 8.65e-27 Length: 3552 Pred. No.: 8.45.00 Matches: 99 Score: 545.00 Matches: 99 Percent Similarity: 97.06% Conservative: 0 Best Local Similarity: 97.06% Mismatches: 3 Query Match: 65.61% Gaps: 0	US-09-750-240-2 (1-104) x AX189766 (1-3552) QY	Qy 21 GluargasnGlyGlnLysargSerargargGlyThrargalaGlyGlyPheCysThr 40 	Qy 41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60	Qy 61 ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys 80 	Qy 81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrThrThr 100 	Qy 101 AlaGly 102 	AX189768 3582 bp	cent	SOURCE synthetic construct. ORGANISM synthetic construct artificial sequences. REFERENCE 1 (bases 1 to 3582) AUTHORS Hammond, H. K. and Gao, M.	
Db 61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCGCACTCGGGCAGGTGGCTTCTGCACG 120	Qy 41 ProArgTyrMetSerCysLeuArgAspalaGluProProSerProThrProAlaGlyPro 60 111111111111111111111111111111111111	81 241 101 301	SULT 4 189761 CUS CUS FINITION Seque CESSION AX189	NEYWORDS SOURCE SOURCE ORGANISM Homo sapiens ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. AUTHORS Hammond, H.K. and Gao, M. TITLE Gene therapy for congestive heart failure JOGRNAL Patent: WO 0148164-A 5 05-JUL-2001;	RES Source	64 t	Pred. No.: 8.64e-27 Length: 3549 Score: 8.545.00 Matches: 99 Percent Similarity: 97.06% Conservative: 0 Best Local Similarity: 97.06% Mismatches: 3	Gaps: 0-2 (1-104) x AX189761 (1-3549)	Oy 1 MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThralaTrpGly 20	Oy 21 GluArgAsnGlyGlnLysArgSerArgArgArgClyThrArgAlaGlyGlyPheCysThr 40	Qy 41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60	Qy 61 ProArgCysProTrpGlnAspAlaPheIleArgArgGlyGlyPro***LysGlyLys 80	Qy 81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100 	Qy 101 AlaGly 102

4

Page

```
Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ..
0
                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      377
                                                                                                                                                          CDS
 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRI 10-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
Submitted (06-OCT-1997) Osamu Ohara, Kazusa DNA Research Institute,
Laboratory of DNA Technology; Yana 1532-3, Kisarazu, Chiba
292-0812, Japan (F-mail:cdnainfo@kazusa.or.jp, Tel:+81-438-52-3913,
Fax:+81-438-52-3914)
On May 9, 2002 this sequence version replaced gi:2887418.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ishikawa,K., Nagase,T., Nakajima,D., Seki,N., Ohira,M., Miyajima,N., Tanaka,A., Kotani,H., Nomura,N. and Ohara,O. Prediction of the coding sequences of unidentified human genes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SK
                                                                                                                                                                                                                                                                                                    GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                 141
                                                                                                                                                                                                                                                                                                                                                                       261
                                                                                                                                                                                                                                                                                                                                                                                                       262 GAGCTGGGGCTGCGGCCAGGGCCCTGGGCTTCGAGGATACCGAGGTGACAAGACGACAGAGG 321
                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens male brain cDNA to mRNA, clone_lib:pBluescriptII plus clone:hh01205s1.
                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                           40
                                                                                                                                                                                                                                     81
                                                                                                                                                                                                                                                                                                                                                linear
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (US)
                                                                                                            3582
99
0
3
0
         Location/Qualifiers
1. 3582
7. organism="synthetic construct"
/db_xref="taxon:32630"
/note="Modified AC-VI"
a 1036 c 1067 g 776 t
                                                                                                                                 Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens KIAA0422 mRNA, partial cds. AB007882
                                                                                                             Length:
Matches:
                                                                                                                                                                   Gaps:
                                                                                                                                                                                          (1-3582)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (4 (5), 307-313 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AB007882.2 GI:20521044
                                                                                                                                                                                        US-09-750-240-2 (1-104) x AX189768
                                                                                                         8.71e-27
545.00
97.06%
97.06%
95.61%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 5877)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                  æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in vitro
DNA Res.
98116655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KIAA0422.
                                                                                                                                                                                                                                                                                                                                                                                                                                      101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                            322 GGCGGG 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ohara, O.
                                                                703
                                                                                                  Alignment Scores:
                                                                                                             ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
ACCESSION
                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAU
MEDLINE
PUBMED
                                                                                                                                                                                                                                    22
                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                               82
                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                           81
                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AB007882
          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                          ORIGIN
                                                                                                                        Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rocus
                                                                                                             Pred
                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          임
```

```
DNA
                                                 /clone_lib="pBluescriptII SK plus"
/note="This sequence was obtained by subcloning of the I
fragments derived from two cDNA clones (1 - 1352 was
derived from pg00161 and 1353 - 5877 was derived from
hh01205)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                                                                                                                                                                                         316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      376
                                                                                                                                                                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        80
                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                5877
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                   Conservative:
                                                                                                                                                                                                                                                                                                                                         Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                     Length:
Matches:
                                                                                                                                                                                                                                                                                         1782 g 1335
             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="hh01205s1"
                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                                                                                                      US-09-750-240-2 (1-104) x AB007882 (1-5877)
                                          /tissue_type="brain"
ocation/Qualifiers
                                                                                                    .3484
/gene="KIAA0422"
                                                                                            /gene="KIAA0422"
                                                                                                                   /codon_start=2
                                                                                                                                                                                                                                                                                   GEMTTYFLNGGPSS
                                                                                                                                                                                                                                                                                                                   1.35e-26
545.00
97.06%
97.06%
95.61%
                                    /sex="male
                                                                                                                                                                                                                                                                                        1612 c
                                                                                    1. .5877
                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                          ø
                                                                                                                                                                                                                                                                                          1148
```

S

```
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
AC021647/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
    ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                / CEARS LALLON = "MSWESGLLVPKVDERKTAWGERNGOKRSFRRGTRAGGFCTPRYM
SCLRDAEDPSPTPAGPPRCPWQDDAFIRRGGPGKGKELGLRAYALGFEDTEVTTAGG
TAEVAPDAVPRSGRSCWRRLVQVCSKOFFRSAKLERLYQRYFCPMNGSELTLLMAVLU
LLTAVLLAFHAAPARPQPARVALLACAAALFVGLMVVCNRHSFRQDSWWVSYVVLGI
LAAVQVGGALAADPRSPSAGLWCPVFVYIAYTLLPIRMRAAVLSGLGLSTLHLILAW
QLNRGDAFUWQLGANVLLFCTNVIGICTHYPAEVSGRAPQPERFRGYIQARLHLQHE
NRQOERLLLSVLPQHVAMENKEDINTKKEDMMFHKIYIQKHDVSILFADIEGFTSLA
SQCTAQELVWTNELRARFOKLAAENHCLRIKIKILGOCYTCVSGLPEARADHAHCCVEM
GVDMIEAISLVREYTGVNNNMRVGTHSGRYHGGVLGLRKWQEDVWSNDYLLANHHRAG
GRAGFIHITRATLQYLNGDYEVFEFFFFFFFFKILSGVHIGTFILLGASQCKREKEKAML
AKLQRTRANSMEGLAMPRWPDRAFSRTKDSKAFRQMGIDDSSKDNRGYQDALNFEDEV
DEFLSRAIDARSIDQLRKDHVRFLLTFQREDLEKKYSRKVDPRFGAYVACALLVFCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QVESTARLDFLWKLQATGEKEEMEELQAYNRRLLHNILPKDVAAHFLARERRNDELYY
OSCECVANWEASIANFSEFYVELEANNEGVECIRLLMEIIADFDEIISEERFRQLEKI
KTIGSTYMAASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQMKIGLN
MGPVVAGVIGARKFQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECR
GVVKVKGKGEMTTYFLNGGPSS"
                                                                                                                                  PRI 15-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fig. 2 (bases 1 to 6463)
Wicker,R., Gascon Catalan,A., Cailleux,A.-F., Starenki,D., Stengel,D., Sarasin,A. and Suarez,H.G.
Direct Submission
Direction/Oualifiers
Location/Oualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ICFIQLLIFPHSTLMLGIYASIFLLLLITVLICAVYSCGSLFPKALQRLSRSIVRSRA
HSTAVGIFSVLLVFTSAIANMFTCNHTPIRSCAARMLNLTPADITACHLQQLNYSLGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DAPLCEGIMPTCSFPEYFIGNMLLSLLASSVFLHISSIGKLAMIFVLGLIYLVLLLLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PPATIFDNYDLLLGVHGLASSNETFDGLDCPAAGRVALKYMTPVILLVFALALYLHAQ
                                                                                                                                                                                                                                               Homo sapiens
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 6463)
Wicker, R., Catalan, A.G., Cailleux, A., Starenki, D., Stengel, D.,
Sarasin, A. and Suarez, H.G.
Cloning and expression of human adenylyl cyclase type VI in normal
thyroid tissues
                                                                                                                  AF250226 6463 bp mRNA linear PRI 1
Homo sapiens adenylyl cyclase type VI mRNA, complete cds.
AF250226
                                                                                                                                                                                                                                                                                                                                                                                                                                              Biochim. Biophys. Acta 1493 (1-2), 279-283 (2000)
20435313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="adenylyl cyclase type VI"
/protein_id="AAF82478.1"
/db_xref="GI:9049783"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="12"
/map="12q12-q13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="thyroid"
complement(19. .447)
/rpt_family="Alu"
/rpt_type=dispersed
469. .561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        469. .561 ____refsed
/rpt_family="MIR"
/rpt_type=1spersed
695. .400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                 AF250226.1 GI:9049782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .6463
101 AlaGly 102
                                         442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10978539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                       437 GGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                   RESULT 8
AF250226
                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                       Op
```

1871 g

1795 c

Alignment Scores:

ORIGIN

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bukaryota; Metazoa; Chordata; Catarrhini; Hominidae; Homo.

I (bases 1 to 19228)

Muzny, D.M., Adams, C., Adio-Oduola, B., Ali-Osman, F.R., Allen, C.,
Alsbrooks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T.,
Barbaria, J., Benton, J., Bimage, K., Blankenburg, K., Bonnin, D.,
Buhay, C., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C.,
Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavaz, D.,
Chen, G., Chen, R., Chen, Z., Chodhay, I., Christopoulos, C.,
Cleveland, C.D., Cox, C., Coyle, M.D., Dathorne, S.R., David, R.,
Davila, M.L., Davis, C., Davy-Carroll, L., Dederloh, D.A.,
Delandy, K.R., Delgado, O., Davy-Carroll, L., Dederloh, D.A.,
Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J.,
Earnhart, C., Edwards, C.C., Ellahj, C., Escotto, M.,
Falls, T., Ferraguto, D., Flagg, N., Foster, P., Frantz, P.,
Gorrell, J.H., Gaucia, A., Garner, T., Garza, N., Gill, R.,
Harris, C., Harris, K., Hart, M., Havlak, P., Haues, A., Hernandez, J., Johnson, R., Holloway, C., Hollins, B.,
Jacobson, B., Jia, Y., Johnson, R., Jolivet, S., Joudah, S.,
Karloson, E., Kelly, S., Khan, M., Hale, S., Joudah, S.,
Lu, Z., Lichtarge, O., Lieu, C., Liu, J., Liu, M., Mayla, P.,
Mansey, E., Mawhiney, E., McLeer, M., Lucier, R., Luna, R., Mayla, P., Mayla, M., Mayla, P., Mavelon, N., Meyla, M., Mayla, P., Mawhiney, E., Machon, N., Nguyen, A., Nguyen, N., Nguyen, A., Nguyen, N., Nguyen, S., Namer, S., Namer, S., Namer, S., Namer, S., Namer, S., Namer, S., Namer,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens chromosome 12 clone RP11-455122, WORKING DRAFT SEQUENCE, 8 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                     61 ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys 80
                                                                                                                                                                                                                                                                                                                                                                                                                                         40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                         21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
6463
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
   Length:
Matches:
Conservative:
                                                                                                     Mismatches:
                                                                                                                                    Indels:
                                                                                                                                                                          Gaps:
                                                                                                                                                                                                                                      US-09-750-240-2 (1-104) x AF250226 (1-6463)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AC021647.18 GI:20335444
1.47e-26
545.00
97.06%
97.06%
95.61%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sapiens
                                                              Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           995 GGCGGG 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101 AlaGly 102
```

AUTHORS

REFERENCE

REFERENCE

COMMENT

```
Query Match:
DB:
                                   source
                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                          ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC117498/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
Nguyen, N., Nickerson, E., Nwokenkwo, S., Oguh, M., Okwuonu, G., Oragunye, N., Oviedo, R., Pace, A., Payton, B., Peerry, J., Perez, L., Petres, L., Pickens, R., Primus, B., Put. L., Quilles, M., Ren, Y., Rives, M., Rojas, A., Rojubokan, I., Rolfe, M., Ruiz, S., Savery, G., Scherer, S., Scott, G., Shen, H., Shooshtari, N., Sisson, I., Sodergren, R., Sonatke, T., Sparks, A., Stanley, H., Stone, H., Sutton, A., Taylor, P., Tamerisa, A., Tamerisa, R., Tang, H., Usmani, K., Vasquez, L., Vera, V., Villalon, D., Vinson, R., Wang, O., Wand, S., Ward-Moore, S., Warren, R., Washington, C., Watlington, S., Wulliams, G., Williamson, A., Wleczyk, R., Wooden, S., Worley, K., Weistcock, G. and Gibbs, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a 'working draft' sequence. It currently consists of 8 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (19-JAN-2000) Human Genome Sequencing Center, Department of Molecular and Human Genetics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030, USA
3 (bases 1 to 193283)
Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (09-MAY-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
On Apr 28, 2002 this sequence version replaced gi:15809061.

Center: Baylor College of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing vector: Plasmid;
Sequencing vector: M13;
Chemistry: Dye-primer Bodipy: 2% of reads
Assembly program: Phrap; version 0.990329
Consensus quality: 219180 bases at least Q40
Consensus quality: 233400 bases at least Q20
Estimated insert size: 209025; sum-of-contigs estimation
Quality coverage: 10x in Q20 bases; sum-of-contigs estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2133: contig of 2133 bp in length 2233: gap of unknown length 5400: contig of 3167 bp in length 5500: gap of unknown length 7889: contig of 2389 bp in length 7889: gap of unknown length 35556: contig of 27667 bp in length 65617: contig of 2861 bp in length 65517: gap of unknown length 65517: gap of unknown length 104448: contig of 38731 bp in length 104448: contig of a8731 bp in length 104448: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 47217 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of 41418 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center code: BCM
Web Site: http://www.hgsc.bcm.tmc.edu/
Contact: hgsc-helpebcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center project name: HAAF
Center clone name: RP11-455122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----- Summary Statistics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig c
                                                                                                                                                                                                                                                                                                                                                   2 (bases 1 to 193283)
Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35656:
35756:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             104548:
145966:
146066:
193283:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          104448:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5401
5501
7890
7990
35657
35757
65618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             104449
104549
145967
146067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
```

```
E 1 (bases 1 to 205248)

Muzny, D.M., Adams, C., Adio-Oduola, B., Ali-Osman, F.K., Allen, C., Asiorocks, S.L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T., Barbaria, J., Benton, J., Blange, K., Blankenburg, K., Bonnin, D., Bunay, C., Burch, P., Burkett, C., Brewn, M., Bryant, N.P., Bunay, C., Burch, P., Burkett, C., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavazo, D., Chen, G., Chen, Z., Chowdhry, I., Christopoulos, C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., David, R., Davila, M.L., Davis, C., Coyle, M.D., Dathonne, S.R., David, R., Davila, M.L., Davis, C., Day, Carroll, L., Dederich, D.A., Davila, M.L., Day, C., Coyle, M.D., Dann, A.L., Ding, Y., Dinh, H.H., Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., Earnhart, C., Edgar, D., Edwards, C.C., Elhaj, C., Escotto, M., Falls, T., Ferraguto, D., Edwards, C.C., Elhaj, C., Escotto, M., Garner, T., Garza, N., Gill, R., Garbin, M., Harris, C., Harris, K., Harris, M., Havlak, P., Hanes, A., Hernandez, J., Hernandez, J., Holloway, C., Hollins, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AC117498 205248 bp DNA 11near HTG 31-JUL-2002
Homo sapiens clone RP11-422021, *** SEQUENCING IN PROGRESS ***, 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74711 GAACGCAATGGGCAGAAGCGTTCGCGGCCGTGGCACTCGGGCCGGTGGCTTCTGCACG 74652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21 GluargasnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly
                                                                                                                                                                   715 others
                                                                                                                                                                                                                                                                                                                               Conservative:
Mismatches:
Indels:
                                                                                                                                    /clone="RP11-455122"
48888 c 46863 g 47544 t
                                                                                                                                                                                                                                                                           Length:
Matches:
                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-750-240-2 (1-104) x AC021647 (1-193283)
                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AC117498
AC117498.4 GI:22002346
HTG; HTGS_PHASE1.
                                                                                                                                                                                                                                                                        3.01e-25
545.00
97.06%
97.06%
95.61%
                       1. .193283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                      æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db 74471 GGCGGG 74466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 AlaGly 102
                                                                                                                                                                   49273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human.
                                                                                                                                                                                                                                                    Alignment Scores:
```

```
Db 168819 GGCGGG 168814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
Homsi, F., Howard, S., Huber, J., Hulyk, S., Hume, J., Jackson, L.E., Jacobson, B., Jia, Y., Johnson, R., Jolivet, S., Joudah, S., Karisson, E., Kally, S., Khan, U., King, L., Korab, J., Kovar, C., Kratovic, J., Kureshi, A., Landry, N., Leal, B., Lewis, L.C., Lewis, L.C., Li, J., Li, Z., Lichterae, O., Lieu, C., Liu, M., Louiseged, H., Lozado, R.J., Lu, X., Lucier, R., Luna, R., Ma, J., Mantinez, E., Marchiney, E., Marwhiney, E., Marwhiney, E., Marwhiney, E., Marwhiney, E., Marwhiney, E., Marwhiney, E., Mitchell, T., Mohabbat, K., Morgan, M., Morris, S., Miner, G., Miner, Z., Mitchell, T., Mohabbat, K., Morgan, M., Morris, S., Morser, M., Neal, D., Newkroon, N., Nguyen, N., Nguyen, N., Nguyen, N., Nickerson, E., Wokenkwo, S., Oguh, M., Okwuonu, G., Oragunye, N., Oviedo, R., Pace, A., Payton, B., Peery, J., Perez, L., Rives, M., Rojabo, R., Pilles, M., Rel, Y., Rives, M., Rojabo, R., Polfe, M., Ruiz, S., Savery, G., Scherer, S., Scott, G., Shen, H., Shooshtari, N., Sisson, I., Sutton, A., Svatek, A., Tamerisa, A., Tamerisa, R., Tang, H., Tansey, J., Taylor, C., Taylor, T., Tamerisa, A., Tamerisa, R., Tang, H., Tansey, J., Taylor, C., Taylor, T., Telfrod, B., Thomas, N., Williams, G., Williamson, A., Wilczyk, R., Wooden, S., Worley, K., Weinstook, G. and Gibbs, R., Warley, R., Wooden, S., Worley, K., Weinstook, G. and Gibbs, R., Carley, R., Stanley, B., Ston, J., Stanley, B., Ston, J., Ston, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOTE: Estimated insert size may differ from sequence length (see http://www.hgsc.bcm.tmc.edu/docs/Genbank_draft_data.html).
NOTE: This is a "working draft" sequence. It currently consists of 20 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (31-JUL-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, Tx 77030, USA
On Jul 29, 2002 this sequence version replaced gi:21956504.

Center: Baylor College of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (10-APR-2002) Human Genome Sequencing Center, Department
of Molecular and Human Genetics, Baylor College of Medicine, One
Baylor Plaza, Houston, TX 77030, USA
3 (bases 1 to 205248)
Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequencing vector: Plasmid; Chemistry: Dye-terminator Big Dye: 100% of reads Assembly program: Phrap; version 0.990329 Consensus quality: 210640 bases at least 030 Consensus quality: 220255 bases at least 030 Consensus quality: 222408 bases at least 020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig of 2025 bp in length gap of unknown length contig of 2312 bp in length contig of 2096 bp in length gap of unknown length gap of unknown length contig of 2415 bp in length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Web site: http://www.hgsc.bcm.tmc.edu/
Drafting Center Code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: hgsc-help@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Center clone name: RP11-422021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center project name: HEAU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2025:
2125:
4437:
4537:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Center code: BCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6633:
6733:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9148:
9248:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Worley, K.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2026
2126
4438
4538
6634
6734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
```

COMMENT

```
Db 169059 GAACGCAATGGCCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGCTTTTTGCACG 169000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Db 168999 CCCGCTATATGAGCTGCCTCCGGGATGCAGCCACCCAGCCCCACCCTGCGGGCCC 168940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db 168879 GAGCTGGGGCTGCGGGCGAGGGCTTCGAGGATACCGAGGTGACAACGACGCG 168820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21 GluargasnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys
                                             contig of 2045 by in length is contig of 2015 by in length is contig of 2817 bp in length is gap of unknown length is contig of 3822 bp in length is gap of unknown length is contig of 2823 bp in length is gap of unknown length is contig of 2231 bp in length is gap of unknown length is gap of unk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6006 others
                                                                                                                                                                                                                                                                                                                                                                              gap of unknown length
contig of 13851 bp in length
gap of unknown learth
                                                                                                                                                                                                                                                                                                                                                                                                                                       gap of unknown length
contig of 14471 bp in length
gap of unknown learn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contig of 35391 bp in length
gap of unknown length
contig of 29784 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contig of 16615 bp in length
gap of unknown length
contig of 16766 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of unknown length
contig of 17467 bp in
gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139873: contig of 24240
139973: gap of unknown 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48444 c 48345 g 51200 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [ndels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-750-240-2 (1-104) x AC117498 (1-205248)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="RP11-422021"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
contig
gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            115533:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                49914:
64385:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81100:
81200:
97966:
                                                                                                                                  16797:
20089:
20189:
                                                                                                                                                                                                                  23014:
                                                                                                                                                                                                                                                                                                                              31033:
                                                                                                                                                                                                                                                                                                                                                                                    35863:
                                                                                                                                                                                                                                                                                                                                                                                                             35963:
                                                                                                                                                                                                                                                                                                                                                                                                                                            19814:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64485:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        175364:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 175464:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              205248:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.17e-25
                                                                                                           16697:
                                                                               13880:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    545.00
97.06%
97.06%
95.61%
                      111636
11736
11736
118881
16698
20090
20190
23315
23315
25346
31034
31034
49815
49915
64386
64386
64386
64386
81101
97967
115534
115534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139974
175365
175465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51253 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
```

œ

JOURNAL

COMMENT

```
3: contig of 12235 bp in length
3: gap of unknown length
4: contig of 12679 bp in length
4: contig of 13262 bp in length
5: gap of unknown length
7: contig of 1393 bp in length
7: contig of 15993 bp in length
7: contig of 15993 bp in length
7: contig of 15990 bp in length
7: gap of unknown length
8: contig of 13508 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_name:Contig21"
a 42962 c 41369 g 42818 t 1601 others
  gap of unknown length contig of 12235 bp in length gap of unknown length contig of 12679 bp in length gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                         /note="assembly_name:Contigl0"
26430. 33594
/note="assembly_name:Contigl1"
33655. 40148
/note="assembly_name:Contigl2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2249. .52390
note="assembly_name:Contig13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62489. .72408
/note="assembly_name:Contig15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52491. 62388 /
/note="assembly_name:Contig14
                                                                                                                                                                                                                                                               l. .1862
/note="assembly_name:Contig5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels:

    171945
/organism="Homo sapiens"

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-750-240-2 (1-104) x AC025557 (1-171945)
                                                                                                                                                                                                                     /db_xref="taxon:9606"
                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                   /clone="RP11-579D7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                vector_side:right"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vector_side:left"
                                                                                                                                                                                                                                         /chromosome="12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clone_end:SP6
  72508:
84743:
84843:
97522:
97622:
110984:
126977:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.51e-23
518.00
96.08%
96.08%
                                                                                                                      127077:
                                                                                                                                                  146237:
                                                                                                                                   146137:
                                                                                                                                                                171945:
    72409
72509
84744
84844
97523
110885
110985
1126978
1126978
126978
126138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43195
                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
Pred. No.:
                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score:
                          AC025557 171945 bp DNA linear HTG 07-JUL-2000 Homo sapiens chromosome 12 clone RP11-579D7, WORKING DRAFT SEQUENCE, 17 unordered pieces.
                                                                                                                                                                                                                                                              Direct Submission
Submitted (10-MAR-2000) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
MMO 63108, USA
On Apr 27, 2000 this sequence version replaced gi:7574970.
                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 171945) Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        * NOTE: This is a 'working draft' sequence. It currently consists of 17 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                       Apr 27, 2000 this sequence version replaced gi:7574970
                                                                                                                                                                                                                                                                                                                                                                                       Center: Washington University Genome Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1862: contig of 1862 bp in length 1962: gap of unknown length 3836: contig of 1774 bp in length 3836: gap of unknown length 6925: contig of 3089 bp in length 7025: gap of unknown length 11773: contig of 4748 bp in length 11873: gap of unknown length 11873: gap of unknown length 19405: contig of 7532 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 10142 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown length
of 7165 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown length
of 8454 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown length
of 9898 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown length
of 9920 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of 6824 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ength
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                The sequence of Homo sapiens clone Unpublished
                                                                                                                                                                                                                                                                                                                                                    ...--- Genome Center
                                                                         AC025557
AC025557.4 GI:7657832
HTG; HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
contiq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
                                                                                                                                                                                                                                 2 (bases 1 to 171945)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6925:
7025:
11773:
11873:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62488:
72408:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         19405:
19505:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26329:
26429:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3594:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33694:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42248:
52390:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2148:
                                                                                                                                                                                                                                                                                                                                                                                 Center code: WUGSC
                                                                                                                      Homo sapiens.
                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3737
3837
6926
7026
11774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11874
19406
19506
26330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33595
33695
42149
42249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1863
1963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52491
62389
62489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52391
RESULT 11
AC025557/c
LOCUS
                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                           DEFINITION
                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                  JOURNAL
REFERENCE
AUTHORS
```

96

----Val

06-FEB-1997

PAT

linear

```
21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                        cardiac adenylyl cyclase
             81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGlu-
                                                                                                                                                                                                                                                                                                                                      Conservative:
Mismatches:
Indels:
                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                           u
                                                                                                                                                                                                                                                                                                                  Length:
Matches:
                                                                                                                                                                                                [Shikawa, Y. Cloning and characterization of a coloning and characterization of a coloning in S578481-A 1 26-NOV-1996; Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 11 from patent.US 6107076.
AR106659
                                                                                                                  129958 4046 bp
Sequence 1 from patent US 5578481.
122958 1 GI:1820749
                                                                                                                                                                                                                                                                          844
                                                                                                                                                                                                                                                                                                                                                                                         US-09-750-240-2 (1-104) x I29958 (1-4046)
                                                                                                                                                                                                                                                              /organism="unknown"
1202 c 1257 g
                                                     97 ThrThrThrProAlaGlyPro 103
                                                                         428 GGGCCAGCTGGAGGTGGCCCT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97 ThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            428 GGGCCAGCTGGAGGTGGCCCT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:12821189
                                                                                                                                                                                                                                                                                                                  4.7e-22
472.50
85.05$
83.18$
82.89$
                                                                                                                                                                                                                                                      .4046
                                                                                                                                                                                Unknown.
Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unknown.
Unclassified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AR106659.1
                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unknown.
                                                                                                                                                                     Unknown.
                                                                                                                                                                                                                                                                          743
                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                          Query Match:
                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                              RESULT 13
                                                                                                                                       ACCESSION
                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AR106659
LOCUS
                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                        129958
                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                              Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                               g
                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                 合
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                               Canis familiaris adenylyl cyclase type VI mRNA sequence. M94968
M94968. M94968. GI:163896
adenylyl cyclase type VI. Canis familiaris cardiac muscle cDNA to mRNA. Canis familiaris.
                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

( pases 1 to 4046)

Katsushikays., Chen,L., Kawabe,J., Nilakantan,R., Halnon,N.J., Homcy,C.J. and Ishikawa,Y.

Cloning and characterization of a sixth adenylyl cyclase isoform: types V and VI constitute a subgroup within the mammalian adenylyl
                                                                                              9
                                                                                   80
                                                                                  61 ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys
                                          ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                             cýclase family
Proc. Natl. Acad. Sci. U.S.A. 89 (18), 8774-8778 (1992)
92409599
1528892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4046
89
2
11
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
1. .4046
/organism="Canis familiaris"
/db_xref="taxon:9615"
/tissue_type="cardiac muscle"
a 1206 c 1254 g 843 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-750-240-2 (1-104) x DOGADENCYC (1-4046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.7e-22
472.50
85.05%
83.18%
82.89%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity:
                                                                                                                                                                                      Db 79261 GGCGGG 79256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                   101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
                                                                                                                                                                                                         RESULT 12
DOGADENCYC
LOCUS
                                                                                                                                                                                                                                      DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Preď. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                          41
                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                            PUBMED
                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
                    g
                                                             g
                                                                                                    οqα
                                                                                                                                             g
   ŏ
                                         ğ
                                                                                ò
                                                                                                                         δ
                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
```

247

40

4046 89 2 11 5

367

80

427

96

PAT 14-FEB-2001

linear

```
Search completed: March
                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
9
                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ROD 27-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 (bases 1 to 4131)
Premont, R.T., Chen, J., Ma, H.W., Ponnapalli, M. and Iyengar, R.
Two members of a widely expressed subfamily of hormone-stimulated adenylyl cyclasses
Proc. Natl. Acad. Sci. U.S.A. 89 (20), 9809-9813 (1992)
93028552
1409703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      adenylate cyclase; adenylyl cyclase type VI.
Rattus norvegicus (strain Sprague-Dawley) adult liver, kidney,
heart conva to mRNA.
Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Multiple mechanisms underlying desensitization of the liver adenylyl cyclase system. Structure and cAMP regulation of liver adenylyl cyclases
                                                                                                                                                                                                                                                               4131 bp mRNA linear ROD 27-APP
Rattus norvegicus adenylyl cyclase type VI mRNA, complete cds.
M96160
                                                                                                                                                                                                                                                                                                                 21 GluargasnGlyGlnLysargSerArgargGlyThrargalaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                    41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60
1 (bases 1 to 4131)
Tang, W.-J. and Gilman, A.G.
Soluble mammalian adenylyl cyclase and uses therefor patent: 18 6107076-A 11 22-Aug-2000;
Location/Qualifiers
                                                                                                                                                           Matches:
Conservative:
Mismatches:
Indels:

    .4131
    /organism="Rattus norvegicus"

                                                                                             924
                                                                                                                                                Length:
                                                                                                                                                                                                                Gaps:
                                                                                                                                                                                                                                         (1-4131)
                                                                              /organism="unknown"
1190 c 1182 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                        US-09-750-240-2 (1-104) x AR106659
                                                                                                                                               1.99e-19
432.00
86.27%
79.41%
75.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 4131)
Premont, R.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M96160.1 GI:202718
                                                                      .4131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thesis (1992)
                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    350 ATGGGG 355
                                                                                           835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus.
                                                                                                                                   Alignment Scores:
                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                               Pred. No.:
                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
PUBMED
                                        JOURNAL
    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RATADCYB
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                          ORIGIN
                                                                                                                                                              Score:
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                      ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
LVFALALYLHAQQVESTARLDFLWKLQATGEKEEMEELQAYNRRLHNILPKDVAAHF
LARBRRNDELYYGSCECVAVWFASIANFSEYVELENNNEGYECLRLINEIIADFDEI
LEBEPRRQLEKIKTIGSTYMAASGLNASTYDQVGRSHITALADYAMRLMEQWKHINEH
SFNNRQMKIGLNMGRVVAGVIGARREQYDJWGNTVNVSSRMDSTGVPDRIQYTTDLYO
VLAAKGYQLECRGVVKVGKGEMTTYFLNGGPSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           116 GAACGCAATGGACAGAAGCGCCCA---CGCCAGGCGACCCGAGCCCGTGGCTTCTGCGCG 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 ProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGlyPro***LysGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                           4131
81
7
12
2
2
/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/tissue_type="liver, kidney, heart"
/dev_stage="adult"
14. 3556
                                                                                                          /evidence-experimental
/product="adenyly! cyclase type VI"
/protein_id="AA446678.1"
/db_xref="G1:202719"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (1-4131)
                                               14. _3556
/EC_number="4.6.1.1"
/citation=[2]
/citation=[1]
                                                                                                                                                                                                                                                                                                                                                                                                             1182 g
                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-750-240-2 (1-104) x RATADCYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     432.00
86.278
79.418
75.798
                                                                                                                                                                                                                                                                                                                                                                                                             1190 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                              ๙
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    350 ATGGGG 355
                                                                                                                                                                                                                                                                                                                                                                                                              835
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
```

1, 2003, 11:05:22

Job time : 2223 secs

*			
og vermyring Fall en i v	en de la Maria (Conjunta de la Maria (Conjun	er jalendaga ingg ráfistis sammer hat ár	
			•

card

```
HSV L/ST region.
Maize cyclin D ZmC
Corn cyclin delta-
Human CDNA clone (
Human CDNA sequenc
HSV9B gene. Herpe
                                                                                                                                                                                                                                                                                                                                                                                                                                  Fusion gene of tree
Human Huntington's
M. caperotein B (gB
Herpes simplex vir
Human nervous syst
Human nervous syst
Kidney cancer rela
Amycolatopsis medi
Thermus thermophil
                                                                                                                                                                                                                                                                                                                                            Streptomyces clavu
Sequence encoding
Streptomyces clavu
DNA fragment encod
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human secreted pro
Human EST-derived
Vector pVGRXR enco
Vector pVGRXR-5A/5
                                                                                                                                                                                                             Human cDNA sequenc
Sequence of Herpes
The nucleotide seq
                                                                                                                                               Cardiac adenylyl c
                                                                                                                                                           Type VI adenylyl c
Mouse ischaemic co
                                                                                           Human cardiac aden
Human cardiac aden
                                                                                                                     Human modified car
Human type VI aden
                                                                                                                                                                                                                                                                                                                                                                                                  Human prostate exp
                                                                                                                                                                                                                                                                                                                                                                                                           Human polynucleoti
Human polynucleoti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Control vector pVg
Human Jun B Proto-
                                                                   Human partial card
Human adenylylcycl
                                                                                                                                                                                    Pseudomonas aerugi
                                                                                                                                                                                                 srmR coding sequen
                                                                                                                                                                                                                                                     Infected cell prot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenyllycyclase; adenylate cyclase; cAMP synthetrase; G-protein receptor kinase; GFK; heart disease; congestive heart fallure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA encoding
                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human partial cardiac adenylcyclase VI (ACVI) isoform #1 cDNA
    SUMMARIES
                                                                                                                                                                                                                                                                                        AAZ19961
AAH17215
AAQ14478
AAV50488
AAQ11126
AAV50431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAV21187
ABA95459
                                                                                                                                                                                                                                                                                                                                                                                                ABV25425
                                                                  AAD08561
                                                                                                                                                                                                                                                                            AAZ94583
                                                                                                                                                                                                                                                                                                                                                                                                                                     ABL41555
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAX78032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABA20510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABL68647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВР
                                         ΩI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAD08561 standard; cDNA; 314
                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                  3642
1032
3387
3394
4098
12749
1974
                                         Length
                                                                                                                                                                                                                                                                           1173
1932
777
2612
                                                                                                                                                                                                                                                                                                                              3465
                                                                                                                                                                                                                                                                                                                                                        1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10982
49634
53789
2127
1544
1622
2241
2241
2295
2301
9110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10982
                            Query
                                                                                           RESULT 1
                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                 0 0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                        00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MODEL-frame+_p2n.model -DEV-x1h
-Q-Cgn2_1/USPTO_spool/US09750240/runat_25022003_103940_24953/app_query.fasta_1.263
-DB-NGenese_10100_2 _QFWT=fastap = SUFETX=rng -MINMATCH=0.1 -LOOPCI_=0
-LOOPEXT-0 -UMITS-bits -START-1 -END=-1-MATRIX=blosum62 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=200 -THR_SCORE=pct -THR_MAX=100 -THR_MIN=0 -ALIGN=15
-WODE=LOCAL -OUTFNMT=pto -NORM-ext -HEAPPIZE=500 -MINLEN-0 -MAXLEN-200000000
-USRP=US09750240_eCGN1_1.1125_erunat_25022003_103940_24953 -NCPU=6 -ICPU=3
-WO XLPXY -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -LONGLOG -DEV_TIMEOUT=120
-WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -YGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7
                                                                                         (without alignments)
1069.442 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N_Geneseq_101002:*

| SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
| SIDSZ/gcgdata/genseq/geneseqn-embl/NA1981.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
| SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1985.DAT:*
| SIDSZ/gcgdata/geneseqy/geneseqn-embl/NA1985.DAT:*
| SIDSZ/gcgdata/geneseqy/geneseqn-embl/NA1986.DAT:*
| SIDSZ/gcgdata/geneseqy-embl/NA1986.DAT:*
| SIDSZ/gcgdata/geneseqy-embl/NA1989.DAT:*
| SIDSZ/gcgdata/geneseqy-embl/NA1989.DAT:*
| SIDSZ/gcgdata/geneseqy-geneseqn-embl/NA1989.DAT:*
| SIDSZ/gcgdata/geneseqy-geneseqn-embl/NA1989.DAT:*
| SIDSZ/gcgdata/geneseqy/geneseqn-embl/NA1989.DAT:*
| SIDSZ/gcgdata/geneseqy/geneseqn-embl/NA1999.DAT:*
| SIDSZ/gcgdata/geneseqy/geneseqn-embl/NA2001A.DAT:*
| SIDSZ/gcgdata/geneseqy/geneseqn-embl/NA2002.DAT:*
| SIDSZ/gcgdata/geneseqy/geneseqn-embl/NA2002.DAT:*
                                                                                                                                                        .....RAVALGFEDTEVTTTPAGPL
                                                                          March 1, 2003, 03:53:43 ; Search time 219 Seconds
 version 5.1.3
- 2003 Compugen Ltd.

    nucleic search, using frame_plus_p2n model

                                                                                                                                                                                                                                                                                    hits satisfying chosen parameters:
                                                                                                                                                                                                                                                             2185239 segs, 1125999159 residues
                                                                                                                                                                                                                                                                                                                                                                               Listing first 45 summaries
                                                                                                                                         570
1 MSWFSGLLVPKVDERKTAWG.
                                                                                                                                                                                             , Ygapext
, Ygapext
, Fgapext
, Delext
GenCore
Copyright (c) 1993
                                                                                                                                                                                                                                                                                                                                                                    Match 100%
                                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
                                                                                                                              US-09-750-240-2
                                                                                                                                                                               BLOSUM62
Xgapop 10.0 ,
Ygapop 10.0 ,
Fgapop 6.0 ,
Delop 6.0 ,
                                                                                                                                                                                                                                                                                                                                                                    Maximum
                                                                                                                                                                                                                                                                                                                                                                                                         Command line parameters:
```

of

Total number

Jatabase

Searched:

Title: Perfect score:

Sequence:

OM protein

Run on:

Scoring table:

Homo sapiens

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

```
AAV23246;
                                        101
                                                                                              RESULT 2
                                                                                                           AAV23246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                            The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardum using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), ademylylcyclases (also referred as ademylcyclase, ademylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASPs is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially partial cardiac ademylcyclase VI (ACVI) isoform which is used for generating a third beta-ASP transgene, used in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                             Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProArgCysProTrpGlnAspAlaPhelleArgArgGlyGlyPro***LysGlyLys 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                     /product= "Human partial cardiac ACVI isoform #1"
/transl_except= (pos:229..231, aa:Xaa)
/note= "Xaa is an unknown amino acid; CDS does not include stop codon"
/EC_number= "4.6.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   314
104
0
0
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 314 BP; 60 A; 98 C; 108 G; 47 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x AAD08561 (1-314)
                                                                                                                                                                                                                                                                                                                                                                                     Example 5; Page 114; 153pp; English
 Socation/Qualifiers
                                                                                                                                                                              2000WO-US35411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76e-36
                                                                                                                                                                                                         99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             568.00
100.00%
100.00%
99.65%
                                                                                                                                                                                                                                   (REGC ) UNIV CALIFORNIA.
                         /*tag=
                                                                                                                                                                                                                                                                                        2001-418260/44.
                                                                                                                                                                                                                                                              Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity:
                                                                                                                                                                                                                                                                                      WPI; 2001-418260,
P-PSDB; AAE04308
                                                                                                                        WO200148164-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                              26-DEC-2000;
                                                                                                                                                                                                        27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                             Hammond HK,
                                                                                                                                                   05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred
```

ŏ g à g δ g δ q ò

```
The present sequence encodes human adenylylcyclase isoform VI (AC-VI) from the present invention. The present invention describes a recombinant replication-defective viral particle (I) comprising a gene encoding a beta-adrenergic signalling particle (I) comprising a gene encoding a beta-ASP) operably linked to a promoter. Also described are: (1) a recombinant pro-viral plasmid (Ia) comprising a gene encoding a beta-ASP, as above, operably collinked to a promoter and further comprising a replication-defective viral genome; (2) a (mammalian) cell transfected with (I) or (Ia); (3) an isolated polynucleotide comprising a sequence encoding a human isolated polynucleotide comprising a sequence which hybridises at high stringency to (3); and (6) a vector comprising the polynucleotide of (3); and sequence which phypridises at high stringency to (3); and (6) a vector filtered adenovirus particle preparation. (I) is used to enhance
241 GAACTGGGGCTGCGGGCAGTGGCCTTGGGCTTCGAAGATACCGAAGTGACAAGACAACGACACCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; adenylylcyclase VI; AC-VI; beta-adrenergic signalling protein;
transgene; gene therapy; congestive heart failure; cardiac function;
adenovirus; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vectors containing transgene(s) encoding beta-adrenergic signalling proteins - useful for gene therapy of congestive heart failure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product= "adenylylcyclase isoform VI"
/transl_except= (pos:229..231,aa:Xaa)
/transl_except= (pos:315..317,aa:Xaa)
/note= "no stop codon given; Xaa = unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag= b
/note= "n indicates a gap of about 0.5 kb"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2127 BP; 421 A; 637 C; 615 G; 452 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human adenylylcyclase isoform VI encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ping P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 60; Fig 12A; 114pp; English.
                                                                                                                                                                                                                                                                                                   AAV23246 standard; cDNA; 2127 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (COLL-)-COLLATERAL THERAPEUTICS. (REGC") UNIV-GALLEORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nsel PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cardiac function in mammals.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97WO-US15610.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-0048933,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96US-0708661
                                                                                                                                                                                                                                                                                                                                                                                                                                     17-JUL-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ಥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag=
                                                                                                                                     301 GCGGGACCGCTG 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gao M, Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI:--1.998-193633717
P-PSDB; AAW53345.
                                                                                                   AlaGlyProLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-JUN-1997;
05-SEP-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W09810085-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                05-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12-MAR-1998
```

m

```
Score:
                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                        οχ
                                                                                                                                                                                                                                                                                                                                          ογ
                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                         fallure;
                                                                                                                                                                          240
                                                                                                             GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrPro 100
                                                                                                                                                                                                /product= "Human cardiac adenylcyclase VI isoform #1"
/EC_number= "4.6.1.1"
                                                                                                     40
                                                                                                                                 9
                                                                                                                                                             ProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGlyPro***LysGlyLys 80
                                                                                       9
                                                                         ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                     GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                 Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylylycyclase; adenylate cyclase; cAMP synthetase, Geprotein receptor Kinase; GKK; heart disease; congestive heart cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ds.
           2127
104
0
0
0
                                                                                                                                                                                                                                                                                                     Human cardiac adenylcyclase VI (ACVI) isoform #1 DNA.
            Length:
Matches:
Conservative:
Mismatches:
                                        Indels:
                                               Gaps:
                                                           US-09-750-240-2 (1-104) x AAV23246 (1-2127)
                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                             BP
                                                                                                                                                                                                                                                             AAD08563 standard; DNA; 3549
           1.86e-35
568.00
100.00%
100.00%
99.65%
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0472667.
                                                                                                                                                                                                                                                                                                                                                                                                                                               26-DEC-2000; 2000WO-US35411
                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                         ø
                                                                                                                                                                                                                                                                                                                                                                               1..3504
/*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                   AlaGlyProLeu 104
                                                                                                                                                                                                                                 301 GCGGGACCGCTG 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-418260/44.
P-PSDB; AAE04310.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gao M;
                                 Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                   WO200148164-A2
                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-DEC-1999;
     Alignment Scores:
                                                                                                                                                                                                                                                                                        04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                 05-JUL-2001
                                                                                                                                                                                                                                                                          AAD08563;
                                        Query Match:
             Pred. No.:
                                                                                                                                                                                                                   101
                                                                                                     21
                                                                                                                   61
                                                                                                                                 41
                                                                                                                                                            61
                                                                                                                                                                          181
                                                                                                                                                                                        81
                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                          Key
                                                                                                                                                                                                                                                     RESULT
                                                                         δ
                                                                                      8
                                                                                                    ò
                                                                                                                  g
                                                                                                                                ò
                                                                                                                                             g
                                                                                                                                                           οy
                                                                                                                                                                        g
                                                                                                                                                                                       ò
                                                                                                                                                                                                  g
                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                g
```

```
Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylitycylase; adenylathe cyclase; cAMP synthetrase; GaPprotein receptor kinase; GRK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ds.
                                                                                                                                                       enhancing
                                                                                                                                             The present invention relates to methods and compositions for enhancin cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylytcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present DNA sequence encodes human cardiac adenylcyclase VI (ACVI) isoform which is used for generating a third beta-ASP transgene, used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21 GluArgAsnGlyGlnLysArgSerArgArgArgClyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3549 BP; 699 A; 1025 C; 1061 G; 764 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3549
999
0
3
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human cardiac adenylcyclase VI (ACVI) isoform #2 DNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-750-240-2 (1-104) x AAD08563 (1-3549)
                                                                                                      Page 122-129; 153pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAD08567 standard; DNA; 3552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.91e-33
545.00
97.06%
97.06%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 GGGGGG 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-SEP-2001
                                                                                                      Example 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAD08567;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ٠.
و
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 4
```

us-09-750-240-2.rng

```
241 GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG 300
                                                                                                                                                                                                                                                                                                          Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                invention
                                                                                                                                 AAD08568;
                                                                              RESULT 5
                                                                                            AAD08568
 g
                                                   g
                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase heta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and Grottein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present DNA sequence encodes human cardiac adenylcyclase VI (ACVI) isoform which is used for generating a fourth beta-ASP transgene, used in the exemplification
                   Location/Qualifiers
1..3507
/*tag-a
/*toduct= "Human cardiac adenylcyclase VI isoform #2"
/EC_number= "4.6.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3552 BP; 686 A; 1037 C; 1068 G; 761 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3552
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-2 (1-104) x AAD08567 (1-3552)
                                                                                                                                                                                                                                                                                                                                                           Claim 6; Page 134-140; 153pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.91e-33
545.00
97.06%
97.06%
95.61%
                                                                                                                                                         26-DEC-2000; 2000WO-US35411
                                                                                                                                                                                    99US-0472667
                                                                                                                                                                                                             (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                  2001-418260/44.
                                                                                                                                                                                                                                       Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of the invention
                                                                                                                                                                                                                                                                              P-PSDB; AAE04311
                                                                                                      WO200148164-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
 Homo sapiens.
                                                                                                                                                                                   27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                       Hammond HK,
                                                                                                                                05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  81
                        Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score:
```

à q õ g ò g

δ g à

```
Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylaycylase; adenylate cyclase; cAMP synthetase; Geprotein receptor kinase; GKK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), ademylylcyclases (also referred as ademylcyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present cDNA sequence encodes human modified cardiac adenylcyclase VI (ACVI) isoform which is used for generating a beta-ASP transgene, used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= a
/product= "Human modified cardiac ACVI isoform"
                                                                                                                                                                                                                                                                                                                                                                                 Human modified cardiac adenylcyclase VI (ACVI) isoform cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BP; 703 A; 1036 C; 1067 G; 776 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3582
99
0
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 4; Page 143-150; 153pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                          AAD08568 standard; cDNA; 3582 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.93e-33
545.00
97.06%
97.06%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-DEC-2000; 2000WO-US35411.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0472667
                                                                                                                                                                                                                                                                                                                   04-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel polynucleotide useful for enhancing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-418260/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB; AAE04312
101 AlaGly 102
                                                          301 GGCGGG 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200148164-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
```

DB:

à g ŏ q à g οy g δ g ö g

```
26-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EP543137-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAQ42525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAQ42525
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΩŸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                          80
                                                                                                                                                                                                                                                                                                                                                                   261
                                                                                                                                                            40
                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This DNA sequence encodes human type VI adenylyl cyclase (hAC6, see AAW30599) that is expressed mainly in the heart and brain. hAC6 has a similar putative structure to other adenylyl cyclase isoforms but, like type V, is distinguishable in that it has a larger
                                                                                                                   81
                                                                                                                                                                                                                                       Newly isolated and purified human type VI adenylyl cyclase (hAC6) polypeptide - useful for identifying potential therapeutic agents that modulate hAC6 activity, and for the diagnosis of hAC6-associated diseases and disorders
                                                                        61 ProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGlyPro***LysGlyLys
                                                                                                                                                                                                                                                                                                                                                             CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCCAAGGCCAAG
                                                                                                                                                            GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Adenylyl cyclase type VI; human; hAC6; therapy; diagnosis;
0
Gaps:
                                  US-09-750-240-2 (1-104) x AAD08568 (1-3582)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human type VI adenylyl cyclase cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
145..3651
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 3; Fig 1A-I; 42pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAX00461 standard; cDNA; 4942 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (CORT-) COR THERAPEUTICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97US-0886550.
97US-0070904.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98WO-US13694.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1999-106049/09.
P-PSDB; AAW30599.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322 GGCGGG 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tomlinson JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9901547-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAX00461;
                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                               202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAXO0461
ID AAXX
AAC AAX
XXX AAX
XXX AAX
XXX HUUU
XXX HUUU
XXX HOUU
XXX HOUU
XXX HOUU
XXX HOU
XXX HOU
XXX O1-
PR 01-
PR 0
```

```
N-terminus and a relatively shorter C-terminus as it lacks the C2b cregion. hAc6 cNAM was initially isolated from a human heart cDNA library using an adenylyl cyclase PCR fragment as probe. It was used to design primers that were used in a PCR-based RACE to obtain the full-length cDNA sequence. The invention relates to the hAc6 gene, methods for the recombinant production of purified hAc6 and the proteins made by these methods, antibodies against hAc6. C vectors, probes and host cells (especially HEK-293) transformed by genes encoding polypeptides having hAc6 activity, along with hAc6 diagnostic and therapeutic uses for these various reagents. hAc6 can be used as a tool to screen for agonists and antagonists that stimulate/inhibit hAc6. Such compounds have therapeutic utility in treating diseases caused by aberrant activity of this enzyme, while the compounds have therapeutic utility in the stimulating or in the compounds and passed sourced by aberrant activity of this enzyme, while the compounds are not obtained by stimulating or in the compounds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGlyPro***LysGlyLys
                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4942 BP; 953 A; 1404 C; 1512 G; 1073 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                         4942
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Regulation; cardiac function; heart; heart failure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-750-240-2 (1-104) x AAX00461 (1-4942)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
131..3627
/*tag= a
                                                                                                                                                                                                                                                                                                                                      inhibiting the activity of hAC6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cardiac adenylyl cyclase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAQ42525 standard; DNA; 4046
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.66e-33
545.00
97.06%
97.06%
95.61%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101 Alagly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         445 GGCGGG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-SEP-1993
```

(first entry)

```
Type VI adenylyl cyclase coding sequence.
                       03-JAN-2001
AAA53923;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21
   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               合
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                               A canine heart cDNA library was constructed in lambda gill and was screened with a 970 bp Aatl-Hincil fragment from type I adenyly!

Cyclase CDNA probe (encodes the first cytoplasmic domain of adenyly!

Cyclase, which has significant homology to other previously known types of adenyly! cyclase]. One positive clone, of 5.4 kb was obtd.

Positive colonies were subcloned into puclB and further subcloned and sequenced bidirectionally. The 5.4 kb clone was used to rescreen the library and on averlapping clone contg. the 5' end of the gene was isolated. Together the two clones cover the complete canine cardiac adenyly! cyclase gene. The gene is suspected of being involved in the regulation of cardiac function and it is thought that decreased activity of adenyly! cyclase gene is used in the adenyly! cyclase gene is useful to screen cpds. which stimulate the activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        131 ATGTCGTGGTTTAGTGGCCTCCTGGTCCCCAAAGTGGATGAACGGAAGACAGCCTGGGGT 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGlyPro***LysGlyLys 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Purified DNA encoding cardiac adenylyl cyclase - useful to screen for cpds. which stimulate activity of the cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGlu-------val
                                                                                                                                                                                                                                                                                                                                                         Sequence 4046 BP; 743 A; 1206 C; 1254 G; 843 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                        4046
89
2
11
5
                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x AAQ42525 (1-4046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAA53923 standard; cDNA; 4131 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ThrThrThrProAlaGlyPro 103
                                                                                                                                                              Claim 1; Fig 2; 34pp; English.
                                                     (AMCY ) AMERICAN CYANAMID CO.
                                                                                                                                                                                                                                                                                                                                                                                      9.62e-28
472.50
85.05%
83.18%
82.89%
           92EP-0117374.
                                91US-0793961.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        428 GGGCAGCTGGAGGTGGCCCT
                                                                                                WPI; 1993-168873/21.
                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                          P-PSDB; AAR37309
                                                                                                                                                                                                                                                                                                                                     the cyclase
           12-OCT-1992;
                                18-NOV-1991;
                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
Pred. No.:
                                                                          Ishikawa Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
                                                                                                                                                                                                                                                                                                                                                                                        ..
No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
AAA53923
ID AAA5
 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
```

```
A recombinant Adenylyl cyclase is described which lacks membrane bound domains. Separation and purification of the recombinant enzyme is much easier compared with wild type enzymes and the recombinant enzyme is more stable than the wild type enzyme which allows easier screening of compounds that stimulate and inhibit Adenylyl cyclase activity. The recombinant adenylyl cyclase comprises a chimera of adenylyl cyclase comprises a chimera of adenylyl cyclase is useful for screening inhibitors and stimulators of adenylyl cyclase is useful for screening inhibitors and stimulators of adenylyl cyclase extivity. Inhibitors of the enzyme are useful for treating cholera, pituttary tumors, heart failure, ischaemla, endocrine disorders and cell necrosis. Stimulators of adenylyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel soluble mammalian polypeptide composition comprising adenylyl cyclase activity for screening stimulators and inhibitors of adenylyl cyclase, is activated by Gsalpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluargasnGlyGlnLysargSerargargArgGlyThrargalaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for treating pseudohypoparathyroidism and other
                          cyclic AMP; adenosine monophosphate; screening; stimulation; inhibition; treatment; Cholera; pituitary tumour; heart failure; ischaemia; endocrine disorder; cell necrosis; pseudohypoparathyroidism; endocrine deficiency; human; ss.
Adenylyl cyclase; type I; type II; recombinant; enzyme; cAMP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4131 BP; 835 A; 1190 C; 1182 G; 924 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4131
81
7
12
2
                                                                                                                                                                                                                                                                                                       /product= Type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Columns 75-78; 73pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-2 (1-104) x AAA53923 (1-4131)
                                                                                                                                                                                                           Location/Qualifiers
14..3556
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96US-0726214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95US-0005498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.4e-24
432.00
86.27%
79.41%
75.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      endocrine deficiencies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2000-578539/54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tang W;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAB02010.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-OCT-1996;
                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-OCT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                 JS6107076-A.
                                                                                                                                                                                                                                                                                                                                                                                                                      22-AUG-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cyclase are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gilman AG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match:
```

^

```
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAS54118,
                     Score:
                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                            ò
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                음
                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention describes a method for examining ischaemic conditions, comprising measuring the expression levels of particular genes (I) in a test sample or determining the expression profile of a gene group in the sample comprising genes selected from (I). The method is useful for examining the ischaemic condition (e.g. compressive ischaemia, occlusive ischaemia or vasospastic ischaemia) by measuring expression levels of particular genes (ABE93020 to ABE93012, encoding the protein sequences in ABE57020 to ABE97031) or by determining the expression profile of a gene group comprising these genes. The expression levels or expression profiles produced by these genes are used as an indicator when screening for ischaemic condition-improving drugs or therapeutics for ischaemic diseases. ABE19913 and ABE9914 represent PCR primers for a mouse ischaemic condition related sequence, which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Examining the ischemic condition (e.g. occlusive ischemia) by measuring expression levels of particular genes defined in the specification or by determining the expression profile of a gene group comprising these
                                                                                           116 GAACGCAATGGACAGAAGCGCCCA---CGCCAGGCGACCCGAGCCCGTGGCTTCTGCGCG 172
                                ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                            CCCCGCTACATGAGCTGCCTCAAGAATGTGGAGCCACCCAGCCCCACTCCTGCAGCTCGC
                                                                                                                                                         GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SS.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Mouse; ischaemia; compressive ischaemia; occlusive ischaemia; vasospastic ischaemia; ischaemic condition; ischaemic disease;
                                                                                                                                                                                                                                                                                                                                                                                                             Mouse ischaemic condition related cDNA sequence SEQ ID NO:716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 5841 BP; 1214 A; 1558 C; 1673 G; 1396 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ishii Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Takahashi Y, Nagata T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UYNI-) UNIV NIHON SCHOOL JURIDICAL PERSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 2; Page 1771-1780; 2690pp; English
                                                                                                                                                                                                                                                                                                                ABI99680 standard; cDNA; 5841 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-MAY-2001; 2001WO-JP04192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000; 2000JP-0145977.
                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ishikawa K, Asai S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-034733/04.
P-PSDB; ABB57257.
                                                                                                                                                                                                                     101 AlaGly 102
                                                                                                                                                                                                                                                  350 ATGGGG 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200188188-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                                                                                                                                                                            07-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-NOV-2001
                                                                                                                                                                                                                                                                                                                                             ABI99680;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genes
                                41
                                                             173
                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                             q
                                à
                                                                                           à
                                                                                                                      Ω
                                                                                                                                                       δ
                                                                                                                                                                                    a
                                                                                                                                                                                                                  δy
```

Alignment Scores:

```
213 CCTCGCTACATGAGCTGCCTCAAGAATGCGGAGCCACCCAGCCCCACTCCTGCAGCTCAC 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GJ;
                                                                                                                                                                                                                         61 ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys 80
                                                                                                                                        GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                      Pseudomonas aeruginosa DNA for cellular proliferation protein #249.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Carr
                                                                                                                                                                               ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Trawick JD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New polynucleotides for the identification and development antibiotics, comprise sequences of antisense nucleic acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Antisense; ds; prokaryotic cellular proliferation gene;
antibiotic; antibacterial; drug design.
5841
81
6
13
2
                    Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ď,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wall
  Length:
Matches:
                                                                         JS-09-750-240-2 (1-104) x ABI99680 (1-5841)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zyskind JW,
                                                                                                                                                                                                                                                                                                                                                                          BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-191078P.
2000US-206848P.
2000US-207727P.
2000US-242578P.
2000US-253625P.
2000US-25363P.
                                                                                                                                                                                                                                                                                                                                                                        AAS54118 standard; DNA; 1533
1.98e-24
432.00
85.29%
79.41%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-MAR-2001; 2001WO-US09180.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001US-269308P
                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ohlsen KL, Xu HH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (ELIT-) ELITRA PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-611495/70.
P-PSDB; AAU36259.
                  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                           101 AlaGly 102
                                                                                                                                                                                                                                                                                                                               390 ATGGGC 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200170955-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-MAY-2000; 2
26-MAY-2000; 2
23-OCT-2000; 2
27-NOV-2000; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Haselbeck R,
Yamamoto RT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                 13-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                              AAS54118;
                                                                                                                                                                               41
```

us-09-750-240-2.rng

```
498..500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; AAR31041
        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                       26-JUL-1991;
                                                                                                                                                                                                                                                                                                                                         24-JUL-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alignment Scores:
                                                                                                                                                                                                                                                           27-JAN-1993.
                                                                                                                                                                        EP524832-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local S
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
AAH16074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score:
        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                            The invention relates to antisense inhibitors of genes essential to prokaryotic cellular proliferation, their use in identifying the genes, their use in the discovery of novel antibiotics, the essential genes themselves and the encoded proteins. The prokaryotes used are Escherichia coli, Staphylococcus aureus, Salmonella typhi, Klebsiella communiae, Pseudomonas aeruginosa and Enterococcus faecalis. The invention is also useful for the identification of potential new targets for antibiotic development. The antisense nucleic acids can also be used to obtain antibodies capable of binding to the expressed proteins. The proteins can be used to screen compounds in rational drug discovery comported and to obtain antibodies capable of binding to the expressed proteins. The proteins can be used to screen compounds in rational drug discovery compounds nucleic acids sequence is also useful to screen for homologous nucleic acids which are required for cell proliferation in a wide variety of organisms. The present sequence encodes an essential prokaryotic cellular proliferation protein.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic formation in the content directly from MIPO at the printed specification, but was obtained in electronic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53 -----ProSerProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhe 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34 ArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluPro---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Regulatory; activator; protein; srmR; complementation experiment; macrolide; biosynthetic; gene; transcription; S. ambofaciens; biosynthesis; antibody; polyclonal; monoclonal; pathway; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      459..461
/*tag= b
/note= "Potential translation initiation codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1533 BP; 218 A; 515 C; 571 G; 229 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1533
227
3
229
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19 TrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGly--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
Seq ID No 7755; 511pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-750-240-2 (1-104) x AAS54118 (1-1533)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              340 AGCCGGCGCCCGGGCCAGGTCGTGGA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71 IleArgArgGlyGlyPro***LysGly 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= a
/note= "Claim 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAQ35141 standard; DNA; 2312 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94.00
43.48%
39.13%
16.49%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..2312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ambofaciens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sednence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      srmR coding
Claim 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAQ35141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAQ35141/
\overset{\mathsf{A}}{\times}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{A}}{\circ}\overset{\mathsf{
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
---CACCGGGCCCAGGGTCCCGTACTCGGCGGGGGGCGCCCGAGCGGCTGCACAGGC 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The sequence given encodes the regulatory (activator) protein srmR. This sequence has the ability in complementation experiments to restore macrolide blosynthetic gene transcription in mutants having defective srmR genes due to insertional inactivation of that region of the S. ambofaciens genome. The srmR gene product activates macrolide blosynthetic gene transcription and may be used to increase the efficiency of macrolide blosynthesis. The translation product of this gene is useful for the generation of antibodies (polyclonal or monoclonal) which are useful in the detection of other macrolide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1584 GCGTGGGTGAGCGGG-----GCGCCCCGATCAGGTCGTCGAAGAACTCCTGGTGGTTT 1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1530 GCGCCTTGGGGGAGTCGTCGTGCTGGACGCGCAGGTGCAGCGCGAGGGTGCGGGCGACCA 1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----ThrProAlaGlyProProArgCys---ProTrpGlnAspAspAlaPhe 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  71 IleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1350 GGCCGGTCTCGGCGGCCCGCCGCCGCGCGCGCAGTTCCGTGGGGG------
/*tag- c
/note= "Potential translation initiation codon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encoding regulatory activator protein {\tt SIMR} - for macrolide biosynthesis to increase efficiency of antibiotic prodn.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 44 MetSerCysLeuArgAspAla-------GluProProSerPro-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---AlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgGly-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2312 BP; 342 A; 862 C; 782 G; 326 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2312
36
8
38
38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 SerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33 ThrArgAlaGlyGly---PheCysThrProArg------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-750-240-2 (1-104) x AAQ35141 (1-2312)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 3-4; 22pp; English.
                                                                                                                                                                                                                                                                                     91US-0736178.
                                                                                                                                                                                                                          92EP-0306792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94.00
36.67%
30.00%
16.49%
                                                                                                                                                                                                                                                                                                                                                   (ELIL ) LILLY & CO ELI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  biosynthetic pathways.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1993-028879/04
                                                                                                                                                                                                                                                                                                                                                                                                                 Rao RN, Turner JR;
```

σ

```
2 SerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGlyGlu 21
                                                                                                                                                                                                                                                                                                                                                                                                                      AAN80908,
                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                           g
                                                  g
                                                                                                 δ
                                                                                                                                          q
                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprises a least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end sequence and an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 3'-end sequence complementary to the polynucleotide which comprises a 1-east 15 nucleotides and the combination of the specification. The primer sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides, particularly full-length cDNAs. The primers are also useful for the full-length cDNAs. The primers are also useful for the full-length cDNAs. The primers are also useful for the full-length cDNAs. The primers allow obtaining of the full-length cDNAs. The primers allow obtaining of the full-length cDNAs. The primers allow obtaining of the full-length cDNAs applies allow obtaining of the full-length cDNAs represent human cDNA sequences; AMB92446 to AAH13628 and AAH13633 to AAH13632 to AAH13632 to AAH13632 to Expresent human amino acid sequences; and AAH13632 to AAH13632 to Expressent control of the complement of the exemplification of the complement of t
                                                                                                                                                                                              Human; primer; detection; diagnosis; antisense therapy; gene therapy; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yamamoto J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Saito K, Ya
Otsuki T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2622 BP; 616 A; 748 C; 694 G; 564 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 8; SEQ ID 14768; 2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hayashi K, Sa
A, Nagai K,
                                                                                                                                               Human cDNA sequence SEQ ID NO:14768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Isogai T, Nishikawa T,
Sugiyama T, Wakamatsu
AAH16074 standard; cDNA; 2622 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                     29-JUL-1999; 99JP-0248036.
27-AuG-1999; 95JP-0300253.
11-JAN-2000; 2000JP-0118776.
02-MAY-2000; 2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                        28-JUL-2000; 2000EP-0116126
                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-318749/34
                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                           EP1074617-A2
                                                                                               26-JUN-2001
                                                                                                                                                                                                                                                                                                                                           07-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ishii S,
```

Matches: Conservative: Mismatches: Indels:

242 92.50 48.65% 33.78% 16.23%

Similarity:

Query Match: Best Local Score:

Percent Similarity:

Alignment Scores:

JS-09-750-240-2 (1-104) x AAH16074 (1-2622)

Length:

```
Prepn. of recombinant gB and gD is described in WO88504587. The amino acid sequence and DNA sequence for gB 1 presented in AAP80914 and AAAN80907 differ from that originally presented in Table 1 of International Publication No. WO 85/04587. The DNA sequence in Table 1 contains an error in that an additional nucleotide (G) is listed at position 607 which resulted in a shift in reading frame relative to AAN80907 from which this nucleotide has been deleted.
                                                                                 61
639 GCCTGGTGGACTATGGCGAGGGTGGCGAGGGTCAGTTCAATGAAGACGGCTCCTTCATCG
                            22 ArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThrPro
                                                                                  42 ArgTyrMetSerCysLeuArgAspAlaGluPro-ProSerProThrProAlaGlyProPr
                                                                                                                                                                                                                                                                                                         Sequence of Herpes simplex virus (HSV) glycoprotein B (gB) 2 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vaccine for treatment of herpes simplex virus - contains recombinant HSV glyco:proteins B and D \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3474 BP; 666 A; 1183 C; 1058 G; 567 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3474
37
10
10
32
                                                                                                                                                                 819 ACTTTGCAAGTGGGAGGAGGGG-----AGAAGGGGA 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                      61 oArgCysProTrpGlnAspAspAlaPheIleArgArgGly 74
                                                                                                                                                                                                                                                                                                                                   Vaccine; herpes simplex virus; therapy; ss.
                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers 309..3023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Valenzuela
                                                                                                                                                                                                                       AAN80908 standard; DNA; 3474 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example; Fig 4; 71pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87US-0079605.
86US-0921213.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87WO-US02709
                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91.50
41.23%
32.46%
16.05%
                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= a
                                                                                                                                                                                                                                                                                                                                                              Herpes simplex virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Burke LR, Pachl C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHIR-) CHIRON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1988-119368/17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAP80915
                                                                                                                                                                                                                                                                              09-MAR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-OCT-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-JUL-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-OCT-1986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                               WO8802634-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-APR-1988
                                                                                                                                                                                                                                                 AAN80908;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
DB:
```

for treating a subject

e.g.

ò

ð

ò

```
Query Match:
DB:
                                                                                                                                      ..
⊗
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAV10362
    SSXS
                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCOMMENS AND AC
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                           288 TCGTGCCCCCCCGTCAGGTAGCCTGGGGGCGAGGTGCTGGAGGACCGAGTAGAGGATCGAG 229
                                                                                                                                                                                                                    72
                                                                                                                                 54
                                                                                                                                                                                                                                                                                                       ------ValAlaLeuGlyLeuArgAla-----ValAlaLeuGlyPheGlu 92
                                               34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This is the nucleotide sequence of Herpes simplex virus ICP4 used in the method of the invention as modulators of apoptosis. The methods and products can be used to identify compounds which modulate (stimulate or inhibit) apoptosis in cells. They can be used to immortalise cells for the study of these cells or for growing cells in large numbers for the productions of proteins. They can also be
                                          ArgLysThrAlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArg
                                                                                                                                                                                                                Pro-----ThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhelleArg
                                                                                                                           35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Use of herpes simplex virus U(s)3 polypeptide - for developing products for modulating apoptosis in cells and for identifying compounds which act as stimulators or inhibitors of apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Herpes simplex virus ICP4; HSV ICP4; modulator; apoptosis;
stimulation; inhibition; HSV infection; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The nucleotide sequence of the Herpes simplex virus ICP4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93 AspThrGluVal-----ThrThrThrProAlaGlyProLeu 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product= "HSV ICP4 protein"
                                                                                                                                                                                                                                                                                                   73 Arg-----GlyGlyPro***LysGlyLys-----
US-09-750-240-2 (1-104) x AAN80908 (1-3474)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 2; Pages 60-63; 85pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
361..4257
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAV68520 standard; DNA; 4257 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98WO-US07573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0843659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Roizman B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (ARCH-) ARCH DEV CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Herpes simplex virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1998-594559/50.
P-PSDB; AAW80810.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9846637-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-APR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Leopardi R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAV68520;
                                            15
                                                                                                                                                                                                                                                                                                                                                                                        81
                                                                                                                                                                                                                55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAV68520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                   g
                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

```
2786 ACCCCTGGGCGCGCTGGCGGCGCGCAGCCCCCGGGGCCCAGCCACGGCGGCGCCCCCGCGG 2845
                                                                                                                                                                                                                                                                                                                                                                                                            2903 cecretrececerecereseacesecerearentraaceseseceresecres 2962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----ArgArg-ArgGl 32
                                                                                                                                                                                                                                                                                                                                                                                 32 yThrArgAlaGlyGly-PheCysThrProArgTyrMetSerCysLeuArgAspAlaGluP 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Use of herpes simplex virus ICP4 polypeptide – useful for, e.g.
blocking apoptosis in cells, production of proteins and gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68 AspalaPhelleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                               52 ro-ProSerProThrProAlaGlyProProArgCys------ProTrpGlnAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein number 4; ICP4; alpha-4; cell apoptosis;
ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3014 GCG------GCGACGACGACGATAACCCCCCACGGGGCCG 3052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      88 AlaLeuGlyPheGluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361..4257
/*tag= a
/product= "Infected cell protein"
                                                                   Ŧ;
                                                                                                                                                                 Conservative:
                                                                                                                                                                                       Mismatches:
                                                                   414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Infected cell protein number 4 alpha-4 gene.
                                                                                                                                                                                                                                                                                                      17 ThralaTrpGlyGluArgAsnGlyGlnLysArgSer--
                                                                                                                            Length:
Matches:
                                                                                                                                                                                                        Indels:
used for stimulating apoptosis in cells, with a HSV infection.
                                                                   C; 1663 G;
                                                                                                                                                                                                                                                                 US-09-750-240-2 (1-104) x AAV68520 (1-4257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAV10362 standard; cDNA; 4257
                                                                   BP; 412 A; 1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97WO-US12904.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96US-0690473.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                           91.50
42.86%
36.73%
16.05%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Leopardi R, Roizman B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ARCH-) ARCH DEV CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Herpes simplex virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1998-130697/12.
                                                                                                                                                                                       Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; AAW40200
                                                                   Sequence 4257
                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       therapeutics;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9804709-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-JUL-1996;
                                                                                                          Aliqnment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAV10362;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Infected
```

Disclosure; Fig 2; 63pp; English.

```
The herpes simplex virus (HSV) alpha-4 gene encodes infected cell protein number 4 (ICP4). Both the alpha-4 gene and ICP4 can be used to block cell apoptosis. Similarly the administration of an agent that inhibits ICP4 or the alpha-4 gene can induce apoptosis in HSV infected cells. This can be used for the immortalisation of cells, production of proteins, gene therapy, or inhibition of cell death induced in vivo. They can also be used for production of therapeutics comprising inhibitors of HSV ICP4 function, useful for treating HSV function.
                                                                                                                                                                                                                                                                                                                                                                                      17 ThralaTrpGlyGluArgAsnGlyGlnLysArgSer------ArgArg-ArgGl 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68 AspAlaPheIleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaVal 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ro-ProSerProThrProAlaGlyProProArgCys------ProTrpGlnAsp 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88 AlaLeuGlyPheGluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                        Sequence 4257 BP; 412 A; 1768 C; 1663 G; 414 T; 0 other;
                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                  US-09-750-240-2 (1-104) x AAV10362 (1-4257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Search completed: March 1, 2003, 09:07:43 Job time : 228 secs
                                                                                                                                                                                                                     470
91.50
42.86%
36.73%
16.05%
                                                                                                                                                                                                                                    Score:
Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                      Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
```

			9 x		
· · · · · · · · · · · · · · · · · · ·					
San Sik i e e e e e e e e e e e e e e e e e e	у. у.т Ж и т э г	·	y de sair a ti	* 10 g	, · · · · · · · · · · · · · · · · · · ·
			. early ∜		•
		·	•		
	·				
					a)
					•

Run

```
182, App
1, Appli
6, Appli
6, Appli
                                                                                                                                                                                                              Appli
Appli
Appli
                                                                                                                                                                                                              Sednence Sed
                                                                                                                                                                                                                                                                                                                                                                                                                     Sednence Sed
                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                       Sequence
                                                                                                                                            Sequence
                                                 Sequence
                                                                                               Sequence
                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOR CONGESTIVE
                                                             US-09-144-759-19

US-09-144-759-19

US-09-452-21

US-09-432-30-33-41

US-08-231-033-1

US-08-231-033-57

US-08-940-035A-57

US-08-940-035A-57

US-08-940-035A-57

US-08-935-105A-57

US-08-659-188-17

US-08-659-188-17

US-08-659-188-17

US-08-659-188-17

US-08-659-188-17

US-08-659-188-17

US-08-659-188-17

US-08-659-188-17

US-09-106-638-1

US-09-106-638-1

US-09-106-638-1

US-09-106-638-1

US-09-106-638-1

US-09-106-638-1

US-09-106-638-1

US-08-459-448A-6

US-08-459-448A-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/008,097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Dylan, Tyler M
REGISTRATION NUMBER: 37,612
REFERENCE/DOCKET NUMBER: 22000-20567.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09008097
Patent No. 6306830
GENERAL INFORMATION:
APPLICANT: Hammond, H. Kirk
APPLICANT: Ping, Peul A.
APPLICANT: Ping, Peipei
APPLICANT: Post, Steven R.
APPLICANT: Gao, Meihua
TITLE OF INVENTION: GENE THERAPY FOR
TITLE OF INVENTION: HEART FAILURE
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON & FOERSTER
STREET: 755 PAGE MILL ROAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: CA
COUNTRY: USA
ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
"COUNTRER: IBM COMPATIBLE
"COUNTRER: IBM COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                        CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PALO ALTO
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us-09-008-097-1
                                                                                                                                                                                                                                                                                                                          CITY:
    0000000
                                                                                                                                                                                                                                                                                                                                                        0000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            00000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Command line parameters:
-MODEL-frame+_p2n.model -DEV=xlh
-MODEL-frame+_p2n.model -DEV=xlh
-WODEL-frame+_p2n.model -DEV=xlh
-Q=/cgn2_1/USFTO_spool/US09750240/runat_25022003_103942_24989/app_query.fasta_1.263
-Q=/cgn2_1/USFTO_spool/US09750240/runat_25022003_103942_24989/app_query.fasta_1.263
-DB=Issued_Patents_NA -QENW=fastap -SUFFTX=ni -MINMATCH=0.1 -LOOPCL=0
-LOOPEXT=0 -UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi
-LIST=45 -DOCALIGN=200 -THR_ESCORE==pct -THR_MAX=100 -THR_MIN-0 -ALRSENCON=10
-USER=US09750240_@CGN_1_17_erunat_25022003_103942_24989 -NCPU=6 -ICPU=3
-NO_LNXY -NO_MANP -LARGEDGERX -NGS_SCORES=0 -WAIT -LONGING -DEV_TYMEOUT=120
-WARN TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Appli
Sequence 5, Appli
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 11, Appl
Patent No. 5212296
                                                                                                                                                                                     (without alignments)
724.872 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                            570
1 MSWFSGLLVPKVDERKTAWG.....RAVALGFEDTEVTTFAGPL 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1
Sequence 1
                                                                                                                                                               Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
/cgn2_6/ptodata/1/ina/5B_COMB.seq:*
/cgn2_6/ptodata/1/ina/6A_COMB.seq:*
/cgn2_6/ptodata/1/ina/6B_COMB.seq:*
/cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
/cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
                                                                                                                                                               ; Search time 44
                      GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd
                                                                                                              - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-259-821A-1
US-08-843-659-1
US-08-458-568A-11
5212296-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-008-097-1
US-09-008-097-5
US-09-474-076-1
US-07-793-961A-1
US-08-240-357-1
US-08-240-357-1
US-08-240-357-1
US-07-736-178C-1
US-07-736-178C-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          441362 seqs, 153338381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                         0.5
7.0
7.0
                                                                                                                                                          March 1, 2003, 09:01:49
                                                                                                                                                                                                                                                                                                                                           BLOSUM62
Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 08.
Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              - 6
                                                                                                                                                                                                                                                     US-09-750-240-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               314
3549
4942
4046
4046
4131
2312
2312
4257
4257
12001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Listing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               999.6
95.6
95.6
82.9
82.9
75.8
116.1
116.1
116.1
116.1
116.1
116.1
116.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             568
545
545
472.5
432
94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91.5
91.5
91.5
91.5
89.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number
                                                                                                                 OM protein
                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                  ü0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ño.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Result
                                                                                                                                                                                                                                                          Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
9
10
11
12
```

υU

~

```
δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Пp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                 81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                     314
104
0
0
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 5, Application US/09008097.
Patent No. 6306830
GENERAL INFORMATION:
APPLICANT: Hammond, H. Kirk
APPLICANT: Homel, Paul A.
APPLICANT: Ping, Peipel
APPLICANT: Post, Steven R.
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE
TITLE OF INVENTION: GENE TAILURE
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON & FOERSTER
STREET: 755 PAGE MILL ROAD
                                                                                                                                                                                                             Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                  US-09-750-240-2 (1-104) x US-09-008-097-1 (1-314)
                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                              Gaps:
TELECOMMUNICATION INFORMATION
                                                                                                                     NAME/KEY: Coding Sequence LOCATION: 1...312 OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
                            TELEX: 706141
INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 314 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                       3.1e-41
568.00
100.00%
100.00%
         TELEPHONE: 650-813-5600
TELEFAX: 650-494-0792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 GCGGGACCGCTG 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101 AlaGlyProLeu 104
                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: PALO ALTO STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                           Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 2
US-09-008-097-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                       US-09-008-097-1
                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Tomlinson, James E.
APPLICANT: COR Therapeutics, Inc.
TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF A HUMAN ADENYLYL
TITLE OF INVENTION: CYCLASE
FILE REFERENCE: 44481-5028-01-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3549
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-750-240-2 (1-104) x US-09-008-097-5 (1-3549)
               FastSEQ for Windows Version 2.0
                                                                                                                                                                                                22000-20567.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
             SOFTWARE: FASTSEW ACE
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/008,097
FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY AGENT INFORMATION:
NAME: Dylan, Tyler M
REGISTRATION NUMBER: 37,612
REGISTRATION NUMBER: 22000-205f
TELEFANCE/DOCKET NUMBER: 22000-205f
TELEFANCE/DOCKET NUMBER: 22000-205f
TELEFANCE G50-813-5600
TELEFANCE G50-813-5600
TELEFAN: 706141
SELENATION FOR SED ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 3549 base pairs
TVPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1, Application US/09474076; Patent No. 6465237; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY: Coding Sequence
; LoCATION: 1...3501
; OTHER INFORMATION:
US-09-008-097-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.58e-38
545.00
97.06%
97.06%
OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 GGCGGG 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
US-09-474-076-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match:
DB:
```

```
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        385 GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr
                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: ization of a Cardiac Adenylyl Cyclase TITLE OF INVENTION: ization of a Cardiac Adenylyl Cyclase NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS: ADDRESSE: ANDRESSE: AMERICAN GORDON ADDRESSE: American Cyanamid Company STREET: 1937 West Main Street, STREET: P.O. Box 60
CITY: Stampord
STATE: Connecticut
                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                    US-09-750-240-2 (1-104) x US-09-474-076-1 (1-4942)
CURRENT APPLICATION NUMBER: US/09/474,076
CURRENT FILING DATE: 1999-12-12
PRIOR APPLICATION NUMBER: PCT/US98/13694
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR APPLICATION NUMBER: 08/000,004
PRIOR FILING DATE: 1997-07-01
NUMBER: OF SEQ ID NOS: 2
SEQ ID NO 1
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                           Indels:
                                                                                                                                                                           TYPE: DNA ORGANISM: human type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Sequence 1, Application US/07793961A; Patent No. 5334521
GENERAL INFORMATION: GENERAL INFORMATION: APPLICANT: YOShihiro Ishikawa
                                                                                                                                                                                                                                                                                           6.66e-38
545.00
97.06%
97.06%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 06904
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
                                                                                                                                                                                                                     ; NAME/KEY: CDS
; LOCATION: (145)...(3648)
US-09-474-076-1
                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       445 GGCGGG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                  LENGTH: 4942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-07-793-961A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                           FEATURE
                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
```

```
368 GAGCTGGGGCTGCGGGCGGTGGCCCTGGGCTTCGAGGACACTGAGGCCATGTCAGCGGTT 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGlu------Val
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4046
89
2
11
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/08240357
Patent No. 5578481
GENERAL INFORMATION:
APPLICANT: ISHIKawa, Yoshihiro
TITLE OF INVENTION: Cloning and Characterization of
TITLE OF INVENTION: Cardiac Adenylyl Cyclase
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: American Cyanamid Company
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-2 (1-104) x US-07-793-961A-1 (1-4046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels:
COMPUTER: IBM PC AT
OPERATING SYSTEM: MS-DOS
SOFTWARE: ASCIT from DW4
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/793,961A
FILING DATE: 19911118
CLASSIFICATION: 435
PRIOR APPLICATION ATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: American Cyanamid Company
One Cyanamid Plaza
                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 4046 base pairs listed
TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                                                                                                                                                     FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: GORGON, Alan M.
REGISTRATION NUMBER: 30,637
REFERENCE/DOCKET NUMBER: 31,71
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203 321 2719
TELEPHONE: 203 321 2971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97 ThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            428 GGGCCAGCTGGAGGTGGCCCT 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8.9e-32
472.50
85.05%
83.18%
82.89%
                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-07-793-961A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-240-357-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ..
⊗
```

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21 GluargasnGlyGlnLysargSerArgArgArgGlyThrargAlaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGlu------Val 96
                                 COMPUTER READABLE FURM.

MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/240,357
FILING DATE: 10-MAY-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: GOTGON, Alan M.
REGISTRATION NUMBER: 31,705-01
REFERENCE/DOCKET NUMBER: 31,705-01
TELECHOME: 201-831-324
TELECHOME: 201-831-3305
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 4046 base pairs
"VERCENTER FOR SET ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 4046 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-750-240-2 (1-104) x US-08-240-357-1 (1-4046)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Sequence 11, Application US/08726214
; Patent No. 6107076
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97 ThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  428 GGGCCAGCTGGAGGTGGCCCT 448
                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Tang, Wei-Jen
APPLICANT: Gilman, Alfred G.
                                                                                                                                                                                                                                                                                                                                                                                                                                           8.9e-32
472.50
85.05%
83.18%
82.89%
                                                                                                                                                                                                                                                                                                                                                                                       ; LOCATION: 131..3625
US-08-240-357-1
New Jersey
                                                                                                                                                                                                                                                                                                                                    linear
                     07470-8426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: CDS
           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-726-214-11
                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrTro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOLUBLE MAMMALIAN ADENYLYL CYCLASE AND USES THEREFOR
                                                                                                       Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-750-240-2 (1-104) x US-08-726-214-11 (1-4131)
                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
         TITLE OF INVENTION: AND USES THEREFC NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433
                                                                                        COUNTRY: United States of America ZIP: 77210
                                                                                                                                                                                                                                                                                                       TELEPHONE: (512) 418-3000
TELERAX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 4131 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                2.74e-28
432.00
86.27%
79.41%
75.79%
                                                                                                                                                                                                                                                                                                                                                               TYPE: nucleic acid
STRANDEDNESS: single
 TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
                                                                  Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101 AlaGly 102
                                                                   CITY: Housto
STATE: Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       350 ATGGGG 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
US-07-736-178C-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                US-08-726-214-11
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score:
```

S

```
---CGACGGGGCGCAGGGTCCCGTACTCGGCGAGCGGGCCCCGAGCGGGCTGCACGGG 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2846 CCGCCGCCCTGGAGGCCTACTGCTCCCCGCGCGCGCGCGGCCGAGCTCACGGAC---CACC 2902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2963 TCGCCG------CGCGGTGCGCCCGGCCCCCCCCCCCCAGGCCGCGTGCGGCG 3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----Argarg-ArgGl 32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ro-ProSerProThrProAlaGlyProProArgCys------ProTrpGlnAsp 67
     71 IleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeuGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68 AspAlaPhelleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88 AlaLeuGlyPheGluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                     APPLICANT: Leopardi, Rosario
APPLICANT: Roizman, Bernard
TITLE OF INVENTION: HERRES SIMPLEX VIRUS ICP4 AS AN
TITLE OF INVENTION: INHIBITOR OF APOPTOSIS
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17 ThrAlaTrpGlyGluArgAsnGlyGlnLysArgSer----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-2 (1-104) x US-08-690-473-1 (1-4257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: ARCD:239
TELECOMMUNICATION INFORMATION:
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
                                                                                                                                                                                                                                                                                      ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/690,473
FILING DATE: 26-JUL-1996
CLASSIFICATION: 435
                                                                                             US-08-690-473-1; Sequence 1, Application US/08690473; Patent No. 5876623; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 512/474-7577
INFORMATION FOR SEO ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 4257 base pairs TYPE: nucleic acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.6
91.50
42.868
36.738
16.058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                             Houston
                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                  Texas
                                                                                                                                                                                                                                                                                                                                                                                   77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
US-08-690-473-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                           CITY: F
                                        1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52
                                                                               RESULT 8
     ð
                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1350 GGCCGGTCTCGGCGCCCGGCGCCGCCGCGCGCGCAGTTCCGTGGGGG------ 1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            :::||| ||||||||
1584 GCGTGGGTGAGCGGG-----GCGCCCCGATCAGGTCGTCGTGGTGGCTCT 1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------ThrProAlaGlyProProArgCys---ProTrpGlnAspAspAlaPhe 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44 MetSerCysLeuArgAspAla------GluProProSerPro------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18 ---AlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGly-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33 ThrArgAlaGlyGly---PheCysThrProArg--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 SerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThr---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2312
36
8
8
38
38
                                                    APPLICANT: Rao, Ramachandra N
APPLICANT: Turner, Jan R
TITLE OF INVENTION: ACTIVATOR GENE FOR MACROLIDE
TITLE OF INVENTION: BLOSYNTHESIS
NUMBER OF SEQUENCES: 2
                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
PLING DATE: 19910726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-750-240-2 (1-104) x US-07-736-178C-1 (1-2312)
                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
ATORNEY/AGENT INFORMATION:
NAME: CONTRAC, ROBERT A
REGISCRATION NUMBER: 32089
REFERENCE/DOCKET NUMBER: x8144
TELECOMMUINCATION INFORMATION:
TELEPHONE: 317-276-1294
                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: Eli Lilly And Company STREET: Lilly corporate Center CITY: Indianapolis
                                                                                                                                                                                                                                                                                                                                            PC-DOS/MS-DOS
Sequence 1, Application US/07736178C Patent No. 5514544
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 317-2/0-1224
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 2312 basirs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14.8
94.00
36.678
30.008
16.498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
345..2312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity:
                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                46285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-07-736-178C-1
                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match:
OB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26
```

ŏ g δ Ωp οŻ 셤 ò q ŏ

```
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                              Sequence 1, Application US/09259821A
Patent No. 6210926
GENERAL INFORMATION:
PAPLICANT: LEOPARIO, ROSARIO
APPLICANT: LEOPARIO, ROSARIO
APPLICANT: ROIZMAN, BERNARD
TITLE OF INVENTION: HERPES SIMPLEX VIRUS ICP4 IS AN INHIBITOR OF APOPTOSIS
FILE REFERENCE: ARCD: 317
CURRENT APPLICATION NUMBER: US/09/259,821A
CURRENT FILING DATE: 1999-03-01
PRIOR FILING DATE: 1996-07-26
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin Ver: 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2963 TCGCCG-----CGCGGTGCGCCGGCCCGCCCCCCCCCCAGGCCGCGTGCGGCC 3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32 yThrArgAlaGlyGly-DheCysThrProArgTyrMetSerCysLeuArgAspAlaGluP 52 | | | | | | | | | | | | | | | | |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17 ThrAlaTrpGlyGluArgAsnGlyGlnLysArgSer------ArgArg-ArgGl 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52 ro-ProSerProThrProAlaGlyProProArgCys-----ProTrpGlnAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      68 AspAlaPheIleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaVal
3014 GCG------GCGACGACGACGATAACCCCCCACCCCCACGGGGCCG 3052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3014 GCG-------GCGACGACGACGATAACCCCCACCCCACGCGCCG 3052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/08843659
Patent No. 6218103
GENERAL INFORMATION:
APPLICANT: Leopardi, Roasrio
APPLICANT: Roizman, Bernard
TITLE OF INVENTION: HERPES SIMPLEX VIRUS US3 AND ICP4 AS
TITLE OF INVENTION: INHIBITORS OF APOPTOSIS
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88 AlaLeuGlyPheGluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-750-240-2 (1-104) x US-09-259-821A-1 (1-4257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: United States
ZIP: 772210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: HERPES VIRUS, TYPE 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                      48.6
91.50
42.86%
36.73%
16.05%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: P.O. Bo
CITY: Houston
STATE: Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                     SEQ ID NO 1
LENGTH: 4257
                                                      US-09-259-821A-1
                                                                                                                                                                                                                                                                                                                                                                                            US-09-259-821A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-843-659-1
                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
Sequence 11. Application US/08458568A
Patent No. 5821339
GENERAL INFORMATION:
APPLICANT: Schaffer, Priscilla A.
APPLICANT: Yeh, Lily
TITLE OF INVENTION: Compositions and Methods for Treatment of Herpesvirus
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
APPLICANT: COMPANY OF THE COMPANY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2786 ACCCCTGGGGGGGTGGCGGGGGCACCCCGGGGCCCAGCCACCGCGGGGCGCGGGG 2845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2846 CCGCCCCTGGAGGCCTACTCCCCCGCGCGCGGGCGAGCTCACGAC---CACC 2902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2903 CGCTGTTCCCCGTCCCCTGGCGACCGGCCCTCATGTTTGACCCGCGGGCCCTGGA 2962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YThrArgAlaGlyGly-PheCysThrProArgTyrMetSerCysLeuArgAspAlaGluP 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52 ro-ProSerProThrProAlaGlyProProArgCys------ProTrpGlnAsp 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      68 AspAlaPheIleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaVal 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Woodcock, Washburn, Kurtz, Mackiewicz & No. 5821339ris
STREET: One Liberty Place, 46th floor
CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3014 GCG------GCGACGACGACGATAACCCCCACCCCACGGGCCG 3052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88 AlaLeuGlyPheGluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4257
36
6
38
18
5
                                SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/843,659
FILING DATE: Concurrently Herewith CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 ThralaTrpGlyGluArgAsnGlyGlnLysArgSer----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-750-240-2 (1-104) x US-08-843-659-1 (1-4257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPALIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPerfect 5.1
PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: ARSE
TELECHONIC INFORMATION:
TELEPHONE: (512) 418-3000
TELEFAX: (512) 418-3000
TELEFAX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 4257 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                   ATTORNAY AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48.6
91.50
42.86%
36.73%
16.05%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-458-568A-11/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: P
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-843-659-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
```

```
1012 TGTCGAGGGCGTCCTCGTACACCGTGCCGTCCCGGTTGGCTATCGAGTTGACGA 953
                                                                                                                                                                                                                                                                                                                                                                                                                                                              952 CGATCACGCCCTCGCCGGCCCGGATGAGGTGCCCCTCGACCTCGATGTCCGCCGTGG--- 896
                                                                                                                                                                                                                                                                                                                                                            38 Phe-----CysThrProArgTyrMetSerCysLeuArg 48
                                                                                                                                                                                                                                                                                                                                                                                                                              49 AspalaGluProProSerProThrProAlaGlyPro---ProArgCys---ProTrpGln 66 :: ||| |||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20 GlyGluArgAsnGlyGlnLysArgSerArgArgArg-----GlyThrArgAlaGlyGly 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20 GlyGluArgAsnGlyGlnLysArgSerArgArgArg-----GlyThrArgAlaGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
5212296-5/c
; Patent No. 5212296
; Patent No. 5212296
; APPLICANT: DEAN, CAROLINE; HARDER, PATRICIA A.; LETO, KENNETH
; J.; O'KEERE, DANIEL P.; OMER, CHARLES A.; ROMESSER, JAMES A.;
; TEPPERMAN, JAMES M.;
; TITLE OF INVENTION: EXPRESSION OF HERBICIDE METABOLIZING
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1879
30
6
26
19
                                                                                                                                 1221
30
6
26
19
                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                      Indels:
                                                                                                                                                                                                                                                       US-09-750-240-2 (1-104) x 5212296-16 (1-1221)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-750-240-2 (1-104) x 5212296-5 (1-1879)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 19
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/569,781
FILING DATE: 23-AUG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 464,499
FILING DATE: 12-JAN-1990
APPLICATION NUMBER: 465,605
APPLICATION NUMBER: 405,605
FILING DATE: 11-SEP-1989
FILING DATE: 12-JAN-1990
APPLICATION NUMBER: 405,605
FILING DATE: 11-SEP-1989
                                                                                                                                                                      44.448
37.048
15.708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28.5
89.50
44.44%
37.04%
15.70%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            895 -----
                                                                 LENGTH: 1221
                                                                                                                   Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 850 GTT 848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   87 val 87
                                                 SEQ ID NO:16:
                                                                                                                                                                                                      Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO:5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .. oN .
                                                                                   5212296-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5212296-5
                                                                                                                                                        Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32 yThrArgAlaGlyGly-PheCysThrProArgTyrMetSerCysLeuArgAspAlaGluP 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52 ro-ProSerProThrProAlaGlyProProArgCys------ProTrpGlnAsp 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68 AspAlaPheIleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaVal 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;Patent NO. 5212296
; APPLICANT: DEAN, CAROLINE;HARDER, PATRICIA A.;LETO, KENNETH
;J.; O'KEEFE, DANIEL P.;OMER, CHARLES A.;ROMESSER, JAMES A.
;TEPPERMAN, JAMES M.
TITLE OF INVENTION: EXPRESSION OF HERBICIDE METABOLIZING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88 AlaLeuGlyPheGluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12001
36
6
38
18
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-750-240-2 (1-104) x US-08-458-568A-11 (1-12001)
                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Leary Ph.D., Kathryn R.
REGISTRATION UNUABER: 36,317
REFERENCE/DOCKET NUMBER: DFCI-0029
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 568-3100
TELEPHONE: (215) 568-3100
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                              Herpes Simplex Virus Type 1
            APPLICATION NUMBER: US/08/458,568A FILING DATE: 02-JUNE-1995 CLASSIFICATION: 435
                                            CLASSIFTCATION: 435
PROR APPLICATION DATA:
APPLICATION NUMBER: US 08/065,146
FILING DATE: 05-MAY-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/569,781
APPLICATION NUMBER: 05/07/569,781
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 464,499
                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Herpes simplex virus
                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: DNA (genomic) HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                     LENGTH: 12001 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91.50
42.86%
36.73%
16.05%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOCHROMES
CYTOCHROMES
CYTOCHROMES
CYTOCHROMES
CYTOCHROMES
CYTOCHROMES
CYTOCHROMES
                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                              S
N
                                                                                                                                                                                                                                                                                                                                                                                                            ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              JS-08-458-568A-11
                                                                                                                                                                                                                                                                                                                                                                                              ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5212296-16/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match:
```

à g δ g Qγ g οy g

ò

a

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ор
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
1139 TGTCGAGGGGTCCCGGGTCCTCGTACACCGTGCCGGTTGGCTATCGAGTTGACGA 1080
                                                            1079 CGATCACGCCCTCGCCCGCATGAGGTGCCCCTCGACCTCGATGTCCGCCGTGG--- 1023
                                                                                                                          1022 -------CGACGCGCCCCCCCCGCGATGTCGCGAGGTAGCGGAGCA 978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGTCAACCCCAAGAGCGCCC------ATACGACGAACCACGGCACC 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           273 GGTAGCCTGGGGGCGAGGTGCTGGAGGACCGAGTAGAGGATCGAGAAAACGTCTCGGTCG 214
                                         99
                                                                                              86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCys 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AlaGlyProProArgCysProTrpGlnAspAspAlaPhelleArgArg-----GlyGly 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---GluLeuGlyLeuArgAla-----ValAlaLeuGlyPheGluAspThrGluVal--- 96
                                      49 AspalaGluProProSerProThrProAlaGlyPro---ProArgCys---ProTrpGln
                                                                                              AspAspAlaPhelleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40 ThrProArgTyrMetSerCysLeuArgAspAlaGluProProSerPro----ThrPro
                                                                                                                                                                                                                                  Patent No. 5244792

Patent No. 5244792

Patent No. 5244792

TILLE OF INVENTION: EXPRESSION OF RECOMBINANT GLYOPROTEIN

TILLE OF INVENTION: EXPRESSION OF RECOMBINANT GLYOPROTEIN

TILLE OF INVENTION: EXPRESSION OF RECOMBINANT GLYOPROTEIN

CURRENT APPLICATION DATE: 19

FILING DATE: 20-SEP-1990

PRIOR APPLICATION NUMBER: 921,730

FILING DATE: 20-CCT-1986

APPLICATION NUMBER: 597,784

FILING DATE: 06-APR-1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3472
333
10
36
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gabs:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x 5244792-2 (1-3472)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ---ThrThrThrProAlaGlyProLeu 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        213 TAGACCACGACCGGGGGGCCGATA 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-144-759-17/c
; Sequence 17, Application US/09144759
; Patent No. 6117639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76 Pro***LysGlyLys-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77
88.00
39.45%
30.28%
15.44%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Patent No. 6117639
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 3472
                                                                                                                                                                               977 GTT 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                    Val 87
                                                                                                                                                                                                                        5244792-2/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                              29
                                                                                                                                                    87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81
                                                                                                                                                                                                                                                                                                                                                                                                                                                      5244792-2
                                                                                                                                                                                                            RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score:
           a
                                                                                                                       g
                                      ö
                                                                g
                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                              ò
                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

```
APPLICANT: Hoock, Thomas
APPLICANT: Germann, Ursula
APPLICANT: Kwong, Ann
TITLE OF INVENTION: FUSION PROTEINS, DNA MOLECULES, VECTORS, AND HOST CELLS
TITLE OF INVENTION: USEFUL FOR MEASURING PROTEASE ACTIVITY
FILE REFERENCE: VPI/98-08
CURRENT APPLICATION NUMBER: US/09/144,759
CURRENT FILING DATE: 1998-08-31
SOFTWARE: PATENTING VET: 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1515 GAGCTTTAGTGAGAAACACATCTCGGCGTTCTGGTTGCCCAGCGTACGCAGCTCGGTGAG 1456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1396 GTATATAAATGCGTAGCGTGTCGATGTAGTAGCTCTGGATCGCTTCGACTAGCT---GGG 1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1455 GATCGAGAGCAGCT-TTGCGTAGAAGACGAGGCTCATTGAGTCGCCGCAGTGGCGGTTGA 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22 ArgAsnGlyGlnLysArgSerArgArgArgGlyThr-----ArgAlaGlyGly--- 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15 -----ArgLysThrAlaTrpGlyGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------PheCysThrProArgTyrMetSerCysLeuArgAspAlaGluPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProSerProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPheIleArg
                                                                                                                                                                                                                                                                                                                        Description of Artificial Sequence:man-made artificial sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1279 CGTTGTCCACCTTCATCGAGAACATTTGGCGGCAGAAATGCAGCAGGTCTT 1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73 ArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeu 89
                                                                                                                                                                                                                                                                                                                                                                                                                             2241
38
7
41
32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-750-240-2 (1-104) x US-09-144-759-17 (1-2241)
                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 TrpPheSerGlyLeuLeuValProLysValAspGlu--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        completed: March 1, 2003, 12:17:18
ne : 51 secs
                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                             57.1
87.00
38.46%
32.48%
15.26%
                                                                                                                                                                                                                                                                                                                 CTHER INFORMATION:
CTHER INFORMATION:
US-09-144-759-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                SEQ ID NO 17
LENGTH: 2241
                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search comp
Job time :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53
```

Title: Perfect score:

ou:

Sequence:

Scoring table:

Total number

Searched:

```
Sequence 608, App
Sequence 1179, App
Sequence 2469, App
Sequence 57, Appl
Sequence 57, Appl
Sequence 57, Appl
Sequence 213, Appl
Sequence 113, Appl
Sequence 17, Appl
Sequence 113, Appl
           Sequence 165, App
Sequence 487, App
Sequence 7755, Ap
Sequence 1, Appli
Sequence 6, Appli
Sequence 1, Appli
Sequence 1050, Ap
Sequence 6311, Ap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Hammon, H. K.
APPLICANT: Hammon, H. K.
APPLICANT: Hangel, P. A.
APPLICANT: Pang, P.
APPLICANT: Pang, P.
APPLICANT: Gao, M.
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART
TITLE OF INVENTION: FALLERE
FILE REFERENCE: 220002056723
CURRENT APPLICATION NUMBER: US/09/750,240
CURRENT FILING DATE: 2001-10-12
PRIOR FILING DATE: 1999-12-27
PRIOR APPLICATION NUMBER: US 09/008,097
PRIOR FILING DATE: 1998-01-16
PRIOR FILING DATE: 1997-06-05
PRIOR APPLICATION NUMBER: US 08/924,757
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: US 08/708,661
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: US 08/708, 661
PRIOR FILING DATE: 1996-09-05
NUMBER OF SEQ ID NOS: 13
                                                         US-09-864-761-31718
US-09-815-242-7988
US-09-864-761-15194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-912-15-3
US-09-712-363-13
US-09-894-844-113
US-09-712-363-64
US-09-954-531-124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-929-315-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/09750240 Patent No. US20020103147Al GENERAL INFORMATION:
280
16489
398
1078
1078
4695
4695
4695
4695
1338
11656
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
11878
                                           US-09-750-240-1
33.8.5
212.5
212.5
91.5
89.5
87.5
87.8
                                                                                                                                                        86.5
86.5
86.5
                                                                                                                                                                                                    00
                                                                                                                                               U
                                                                                                                                                                                       000
                                                                                                                                                                                                                                                                                                    000000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Command line parameters:
-WODEL-frame+_D2N.model.-DEV=x1h
-WODEL-frame+_L2N.model.-DEV=x1h
-WODEL-frame+_L2N.model.-DEV=x1h
-WO=/CGN2_1/USPTO_spool/USO9750240/runat_25022003_103943_25085/app_query.fasta_1.263
-OB-PUD1sished_Applications_NA -QEMT-fastap -SUFFIX=rnpb -MINNATCH=0.1
-LOOPCL=0 -LOOPEXT=0 -UNITS=blts -START=1 -END=-1 -MATRIX=blosum62
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE-pct -THR_MAX=0.0
-MAXLEN=2000000000 -USER-USO9750240_CGN_1_1_31_@trunat_25022003_103943_25085
-NCPUG- ICCPUG 3 -NO.XLDXI -NO.AMARP -LARGEQUERY -NEG_SCORES=0 -WAIT -LONGLOG-FGAPEVILED-SUFFIX-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPEP=10 -XGAPEXT=0.5 -FGAPOP=6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1, Appli
Sequence 5, Appli
Sequence 10, Appl
Sequence 12, Appl
                                                                                                                        (without alignments)
1063.219 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.
                                                                                                                                                                                    570
1 MSWFSGLLVPKVDERKTAWG......RAVALGFEDTEVTTPAGPL 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      / Cgn2_6/ptodata/2/pubpna/US07_pUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US07_pUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US07_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US08_PUBCOMB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_USEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_USEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_USEW_PUB.seq:*
/ cgn2_6/ptodata/2/pubpna/US10_USEW_PUB.seq:*
                                                                                                         ; Search time 61 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*
             GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd
                                                                          OM protein – nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-750-240-1
US-09-750-240-5
US-09-750-240-10
US-09-750-240-12
                                                                                                                                                                                                                                                                                                                                                           of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                               460893 seqs, 311809382 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Published_Applications_NA:*
                                                                                                                                                                                                                                                   0.5
0.5
0.0
                                                                                                        March 1, 2003, 11:05:29
                                                                                                                                                                                                                                BLOSUM62
Xgapop 10.0, Xgapext
Ygapop 10.0, Ygapext
Fgapop 6.0, Fgapext
Delop 6.0, Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                       US-09-750-240-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      314
3549
3552
3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99.6
95.6
95.6
```

Jatabase

SEQ ID NO 1

Score

Result No.

```
δλ
                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                             Ωp
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrThrPro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                      80
                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                           ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGCGCCCANGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-V-50-Z40-5
Sequence 5, Application US/09750240
Patent No. US20020103147A1
GENERAL INFORMATION:
APPLICANT: Hammon, H. K.
APPLICANT: Hammon, P. A.
APPLICANT: Hammon, P. A.
APPLICANT: Ping, P.
APPLICANT: Post, S. R.
TITLE OF INVENTION: FAILURE
FILE REFERENCE: 220002056723
CURRENT FILING DATE: 12001-10-12
CURRENT FILING DATE: 1999-12-27
PRIOR PLICATION NUMBER: US 09/472,667
PRIOR FILING DATE: 1999-01-16
PRIOR FILING DATE: 1999-01-16
PRIOR FILING DATE: 1997-06-05
PRIOR FILING DATE: 1997-06-16
PRIOR FILING DATE: 1996-09-05
NUMBER OF SEQ ID NOS: 13
SCOFTWARE: FastSEQ for Windows Version 4.0
TYPE: DNA
                                                                                                                                               314
104
0
0
0
                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x US-09-750-240-1 (1-314)
                                                                                                                                                                                                                      Gaps:
             ; TYPE: DNA
; ORGANISM: Homo sapiens
; FEATURE:
; NAME/KEY: misc_feature
; LOCATION: (1)...(314)
; OTHER INFORMATION: n = A,T,C or G
US-09-750-240-1
                                                                                       Ö
                                                                                                                                          2.33e-43
568.00
100.00%
100.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301 GCGGGACCGCTG 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 AlaGlyProLeu 104
                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
US-09-750-240-5
LENGTH: 314
                                                                                                                                               ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                            Score:
                                                                                                                                               Pred
                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
241 GAGCTGGGGCTGCGGGCAGTGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACACGACAGC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrTro 100
                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                     GENERAL NO. USZUGZUINIA GENERAL NO. USZUGGATION:
GENERAL NO. USZUGGATION:
APPLICANT: Hammon, H. K.
APPLICANT: Insel, P. A.
APPLICANT: Dost, S. R.
APPLICANT: Post, S. R.
APPLICANT: Post, S. R.
APPLICANT: Post, S. R.
APPLICANT: GAO, M.
TITLE OF INVENTION: FAILURE
FILE REFERENCE: 22000205673
CURRENT APPLICATION UNBER: US,09/750,240
CURRENT APPLICATION NUMBER: US,09/750,240
CURRENT FILING DATE: 1999-12-27
PRIOR FILING DATE: 1999-12-27
PRIOR FILING DATE: 1999-12-37
PRIOR APPLICATION NUMBER: US 09/040,097
PRIOR FILING DATE: 1997-09-05
PRIOR APPLICATION NUMBER: US 08/708,661
                                                             3549
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3552
99
                                                                                                Conservative:
Mismatches:
Indels:
                                                                                                                                                                                     US-09-750-240-2 (1-104) x US-09-750-240-5 (1-3549)
                                                                 Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 13
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
US-09-750-240-10
Sequence 10, Application US/09750240
Patent No. US20020103147A1
                                                               4.03e-40
545.00
97.06%
97.06%
95.61%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.03e-40
545.00
; ORGANISM: Homo sapiens
US-09-750-240-5
                                                                                             Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 GGCGGG 306
                                                   Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-10
                                                                    ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No.:
Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81
                                                                                  Score:
```

```
GENERAL INCURANT: TOMINISON, James E.
APPLICANT: TOMINISON, James E.
APPLICANT: COR THERAPEUTICS, INC.
TITLE OF INVENTION: CLCOUNG AND CHARACTERIZATION OF A HUMAN ADENXLYL
TITLE OF INVENTION: CLCLONING AND CHARACTERIZATION OF A HUMAN ADENXLYL
TITLE OF INVENTION: CYCLASE
FILE REFERENCE: 44481-5028-01-US
CURRENT APPLICATION NUMBER: US/10/201,000
CURRENT FILING DATE: 1999-12-12
PRIOR FILING DATE: 1999-12-12
PRIOR FILING DATE: 1999-07-01
PRIOR FILING DATE: 1999-07-01
PRIOR FILING DATE: 1999-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR FILING DATE: 1997-07-01
SPIOR APPLICATION NUMBER: 08/486,550
PRIOR APPLICATION NUMBER: 08/486,550
PRIOR PRIOR PRIOR NUMBER: 08/486,550
                                                                                                                                                                                                                                                                                                                                                                                                      21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                                               4942
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches:
Indels:
                        US-09-750-240-2 (1-104) x US-09-750-240-12 (1-3582)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x US-10-201-000-1 (1-4942)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: human type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 1, Application US/10201000
; Publication No. US20020187540A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.83e-40
545.00
97.06%
97.06%
95.61%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; NAME/KEY: CDS
; LOCATION: (145)..(3648)
US-10-201-000-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    322 GGCGGG 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
US-10-201-000-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                              ò
                                                                                                                                                                                    q
                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                             APPLICANT: INFORMATION:
APPLICANT: INFORMATION:
APPLICANT: INFORMATION:
APPLICANT: Paig, P.
APPLICANT: Post, S. R.
APPLICANT: Gao, M.
ITILE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART
TITLE OF INVENTION: FAILURE
FILE REFERENCE: 220002056723
CURRENT APPLICATION NUMBER: US/09/750,240
CURRENT APPLICATION NUMBER: US/09/750,240
CURRENT APPLICATION NUMBER: US/09/750,240
PRIOR PILING DATE: 1999-12-27
PRIOR PILING DATE: 1999-12-27
PRIOR FILING DATE: 1999-0-16
PRIOR PLING DATE: 1997-0-0-05
PRIOR APPLICATION NUMBER: US/09/24,757
PRIOR APPLICATION NUMBER: US/09/26
NUMBER OF SEQ ID NOS: 13
SOFTWARE: FASLSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3582
999
0
0
0
    0 0 0 0
    Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                     US-09-750-240-2 (1-104) x US-09-750-240-10 (1-3552)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Sequence 12, Application US/09750240; Patent No. US20020103147A1
: DENERAL INFORMATION:
; APPLICANT: Harmnon, H. K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: Modified AC-VI
US-09-750-240-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.07e-40
545.00
97.06%
97.06%
95.61%
97.06%
97.06%
95.61%
10
  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 GGCGGG 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-750-240-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                      g
                                                                                                                                              ö
                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
```

```
Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                             205 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 264
                                                                                265 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCAGCCCTGCGGGCCCC 324
                                                                                                                                  80
                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                               61 ProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGlyPro***LysGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 ProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGlyPro***LysGly 79
                                                                                                                                                                                                                                                                                                                                          Sequence 165, Application US/09933797
Sequence 165, Application US/09933797
GENERAL INFORMATION:
TITLE OF INVENTION: Isolation and Use of Fetal Urogenital
TITLE OF INVENTION: Sinus Expressed Sequences
FILE REFERENCE: 9901-007-999
CURRENT APPLICATION NUMBER: US/09/933,797
CURRENT FILING DATE: 2001-08-22
PRIOR APPLICATION NUMBER: US/09/482,933
PRIOR FILING DATE: 2000-01-14
PRIOR FILING DATE: 1099-05/14
PRIOR FILING DATE: 1099-05/14
PRIOR FILING DATE: 1999-05/14
PRIOR FILING DATE: 1998-05-14
PRIOR PRIOR PRIOR DATE: 1998-05-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     358
62
4
112
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-750-240-2 (1-104) x US-09-933-797-165 (1-358)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 487, Application US/09728445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9.81e-23
338.50
83.54%
78.48%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity:
                                                                                                                                                                                                                                                                                 445 GGCGGG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Murine
                                                                                                                                                                                                                                                 101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                              US-09-933-797-165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-933-797-165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-728-445-487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No.:
                                                41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 7
               셤
                                                ð
                                                                              g
                                                                                                               ò
                                                                                                                                            Dp
                                                                                                                                                                               à
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
Patent No. US20020102543A1

GENERAL INFORMATION:
APPLICANT: Firefacich, Glenn
APPLICANT: Zambrowicz, Brian
APPLICANT: Sands, Arthur T.
TITLE OF INVENTION: No. US20020102543A1e1 Mutated Mammalian Cells and
TITLE OF INVENTION: Animals
FILE REFERENCE: LEX-0102-USA
CURRENT APPLICATION NUMBER: US/09/728,445
CURRENT APPLICATION NUMBER: US 60/168,358
PRIOR FILING DATE: 1999-12-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   220
40
0
6
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Essential Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-750-240-2 (1-104) x US-09-728-445-487 (1-220)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Haselbeck, Robert
APPLICANT: Ohlsen, Kari L.
APPLICANT: Ohlsen, Kari L.
APPLICANT: Ohlsen, Kari L.
APPLICANT: Wall, Daniel
APPLICANT: Trawick, John D.
APPLICANT: Trawick, John D.
APPLICANT: Trawick, John D.
APPLICANT: Tramonoto, Robert T.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Yamamoto, Robert T.
APPLICANT: AU, H. Howard
TITLE OF INVENTION: Prokaryotes
FILE REFERENCE: ELITRA.011A
CURRENT APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-05-26
PRIOR FILING DATE: 2000-10-23
PRIOR FILING DATE: 2000-11-27
PRIOR APPLICATION NUMBER: 60/253,625
PRIOR APPLICATION NUMBER: 60/253,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
PRIOR APPLICATION NUMBER: 60/257,931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length:
                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 891
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 7755, Application US/09815242 Patent No. US20020061569A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      184 CCTCGCTACATGAGCTGCCTC 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41 ProArgTyrMetSerCysLeu 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           212.50
85.11%
85.11%
37.28%
                                                                                                                                                                                                                                                                                                                                                                                             ; ORGANISM: Mus musculus US-09-728-445-487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-815-242-7755/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                             SEQ ID NO 487
LENGTH: 220
                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
```

S Page

```
2786 ACCCCCTGGGCGGCTGGCGGCGGCAGCCCCCGGGGCCCAGCCACACGGCGCGCCCCGCGG 2845
                                           2903 cecrerrececerecerreseasces acerearer rances e esceses e en 2962
                                                                                                                                                                                                                                                       2963 rcccc-----ceceerececeeececececececececeses
                                                                                                                             52 ro-ProSerProThrProAlaGlyProProArgCys------ProTrpGlnAsp
                                                                                                                                                                                                                68 AspAlaPheIleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaVal
                                                                                                                                                                                                                                                                                                                          3014 GCG-------GCGACGACGACGATAAACCCCCACCCCACGGGGCCG 3052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: SmithKline Beecham
STREET: Two, New Horizons Court, Great West Road
CITY: Brentford
STATE: <Unknown>
                                                                                                                                                                                                                                                                                                  88 AlaLeuGlyPheGluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: SmithKline Beecham plc et al
TITLE OF INVENTION: No. US20030022321Alel compounds
NUMBER OF SEQUENCES: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTE: CURINGWIND COUNTY: UK 21P: TW8 9EP COMPUTER EADABLE PORM:

COMPUTER: DISKETTE COMPUTER: DISKETTE COMPUTER: DISKETTE COMPUTER: DISKETTE COMPUTER: DISKETTE COMPUTER: TBM COMPATIBLE COMPUTER: TSASTEM: DOS SOFTWARE: FASTSEQ for Windows Version 2.0 CURRENT APPLICATION DATA: APPLICATION DATA: APPLICATION NUMBER: US/10/071,338 FILING DATE: CURROWN>
PRIOR APPLICATION DATA: APPLICATION NUMBER: CURROWN>
FILING DATE: CURROWN>
FILING DATE: CURROWN>
FILING DATE: CURROWN>
THINKO DATE: CURROWN>
THINKO DATE: CURROWN>
THINKO DATE: CURROWN>
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1182
26
5
115
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-750-240-2 (1-104) x US-10-071-338-6 (1-1182)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear

MOLECULE TYPE: Other

SEQUENCE DESCRIPTION: SEQ ID NO:
US-10-071-338-6
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 6, Application US/10071338 Publication No. US20030022321A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 1182 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 0181-9756294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX: <Unknown>
INFORMATION FOR SEQ ID NO: 6:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                        US-10-071-338-6/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
                                                                                    Db
                                                                                                                                                              Q
                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                         g
                                               ð
                                                                                                                             Ωy
                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/09825288A
Publication No. US20020192822A1
Sequence 1, Application No. US2002019282A1
SEPERBAL INFORMATION:
APPLICANT: LEOPARDI, ROSARIO
TITLE OF INVENTION: HERPES SIMPLEX VIRUS ICP4 IS AN INHIBITOR OF APOPTOSIS
FILE REPERENCE: ARCD:317USCI
CURRENT APPLICATION NUMBER: US/09/825,288A
CURRENT APPLICATION NUMBER: 09/259,821
PRIOR APPLICATION NUMBER: 09/259,821
PRIOR APPLICATION NUMBER: 09/259,821
PRIOR FILING DATE: 1999-03-01
PRIOR FILING DATE: 1996-07-26
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PATENTIN Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        454 TCTGCTGGTGGCCGATGCCGAGGTCGCCGACCAGCGTGT----CGGGATCGATCGCCTCCA 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          514 TGGGTTCGTCGAGGATCAGCAAGCGGCAGTCGCCGATCAGGTTGCGGGCGATCTCGACCA 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             397 GGCCGACCTGGGCCATCGCCTCGCGGGCCGCGCGCA---GGCGCCGACGGTCGATCC 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----ProSerProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhe 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---ArgArg-ArgGl 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34 ArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluPro---
                                                                                                                                                                                                                                                                        1533
27
3
29
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4257
36
6
38
18
                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-750-240-2 (1-104) x US-09-815-242-7755 (1-1533)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19 TrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGly-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-750-240-2 (1-104) x US-09-825-288A-1 (1-4257)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17 ThralaTrpGlyGluArgAsnGlyGlnLysArgSer----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
PRIOR FILING DATE: 2001-02-16
NUMBER OF SEQ ID NOS: 14110
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 7755
LENGTH: 1533
                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         340 AGCCGCCGCCGGGCAGGTCGTGGA 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71 IleArgArgGlyGlyPro***LysGly
                                                                                                        TYPE: DNA
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : HERPES VIRUS, TYPE
                                                                                                                                                                                                                                                                                                                  43.48%
39.13%
16.49%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20.9
91.50
42.86%
36.73%
16.05%
                                                                                                                                                                                      ; LOCATION: (1)...(1533)
US-09-815-242-7755
                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                    NAME/KEY: CDS
                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-825-288A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 4257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-825-288A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                             Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                      Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53
```

δ a d

ò

g

δý

g

ò

5274 CGGTGAAGCCCATGGGGCCGAACCAGTTCTCGAAGATGAAGCCGCCGCCGCGGGGACGCCC 5333

```
61
     34
                                                                  54
15 ArgLysThrAlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArg
                                                                 35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Smithkline Beecham
STREET: Two, New Horizons Court, Great West Road
CITY: Brentford
STATE: <Unknown>
                                                                                                                                                                                                                                                                                              Sequence 1, Application US/10071338
Publication No. US20030022321A1
GENERAL INFORMATION:
TITLE OF INVENTION: No. US20030022321A1e1 compounds
NUMBER OF SEQUENCES: 19
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTAT: UK
21P: TW8 9EP
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTESO for Windows Version 2.0
CURRING DATE: 08-Feb-2002
ETLING DATE: 08-Feb-2002
CLASSIFICATION: <UNKnown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
                                                                                                                                    ------GlyProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-750-240-2 (1-104) x US-10-071-338-1 (1-7193)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: «Unknown>
FILING DATE: «Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Valentine, jill B
REGISTRATION NUMBER: «Unknown>
REGISTRATION NUMBER: P31731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE DESCRIPTION: SEQ ID NO: 1: US-10-071-338-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
TELEPHONE: 0181-9752000
TELEFAX: 0181-9756294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 7193 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX: <Unknown>
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                  ProThrProAla------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear MOLECULE TYPE: Other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  49.218
41.278
15.708
                                                                                                                                                                                                                               778 AGATGTCCA 770
                                                                                                                                                                                                ArgCysPro 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                  US-10-071-338-1
                                                                                                                                55
                                                                                                                                                                                                 62
                                                                                                                                                                                                                                                                 RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score:
                                                                                              염
                                                                                                                                ò
                                                                                                                                                             g
                                                                                                                                                                                                                             qq
                                                                 à
                                                                                                                                                                                                 ò
```

15 ArgLysThralaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrarg 34

δ

```
APPLICANT: Gaiger, Alexander
APPLICANT: Algate, Paul A.
APPLICANT: Mannion, Jane
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE DETECTION, DIAGNOSIS AND THER
                                                                                                                                                                                                                                Sequence 1050, Application US/09833381
Patent No. US20020132090A1
GENERAL INFORMATION:
APPLICANT: RObison, Keith E.
TITLE OF INVENTION: No. US20020132090Ale1 Nucleic Acid and Protein Homologs
FILE REFERENCE: 5800-119
CURRENT APPLICATION NUMBER: US/09/833,381
CURRENT FILING DATE: 2001-04-11
PRIOR FILING DATE: 2000-02-29
NUMBER OF SEC ID NOS: 2050
                                 5381
                                                                                                    5382 CCCCGACCCGCTCGCCCCGCCGCAGGTGCCGTGGCCCGCCGCCTCGGCCTCCTCCGCGT 5441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194 GAC-----GCGGCTGCCTGCTGGGGGTGTGAGCGAGAGGCTGAGCGCTGCCCCCCCTCGGC 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18 AlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArg---ArgGlyThrArgAlaGly 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64
                       52 ------ProProSerProThrProAlaGly-------ProProArgCysPro
 35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              618
30
5
26
17
                                                                     -----GlyProPro----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            37 GlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGlu-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-750-240-2 (1-104) x US-09-833-381-1050 (1-618)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: FastSEQ for Windows Version 3.0 SEQ ID NO 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Sequence 6321, Application US/09796692; Publication No. US20020198362A1; GENERAL INFORMATION:
                                                                     ProThrProAla------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; OTHER INFORMATION: n = A,T,C
US-09-833-381-1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: HOMO sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
LOCATION: (1)...(618)
                                                                                                                                                         11111111
5442 AGATGTCCA 5450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                      62 ArgCysPro 64
                                                                                                                                                                                                                         US-09-833-381-1050/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-796-692-6321/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ..
0
                                                                     52
à
                                 q
                                                                   δ
                                                                                                 q
                                                                                                                                      δ
                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
```

```
υ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: n equals a,t,g, or c NAME/KEY: misc_feature LOCATION: (373)
OTHER INFORMATION: n equals a,t,g, or c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION: (132)
OTHER INFORMATION: n equals a,t,g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: n equals a,t,g, NAME/KEY: misc_feature LOCATION: (138) OTHER INFORMATION: n equals a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
LOCATION: (139)
OTHER INFORMATION: n equals a,t,g,
                                                                                                                                                                                                                                                                             87.00
40.00%
40.00%
15.26%
                                                SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1483
LENGTH: 16489
                        NUMBER OF SEQ ID NOS: 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           503 GGCCCCAGATGGGT 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75 GlyPro***LysGly 79
                                                                                                                           TYPE: DNA
CORGANISM: Homo sapiens
US-09-764-868-1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (137)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-925-299-608/c
                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 608
LENGTH: 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION:
                                                                                                                                                                                                                                                                                                                                                              Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE
                                                                                                                                                                                                                                                                ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19 TrpGlyGluArgAsn-----GlyGlnLysArgSerArgArgArgGlyThrArgAla 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55 ProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhelleArgArgGly 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36 Gly---GlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131 CCACACCCTGCAGGCCTGCCCAGCTCTTCGTGGCAA------AGC 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1483, Application US/09764868
Patent No. US20020168711A1
GENERAL INFORMATION:
APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
FILE REFERENCE: PT232
CURRENT APPLICATION NUMBER: US/09/764,868
CURRENT FILING DATE: 2001-01-17
Prior application data removed - refer to PALM or file wrapper
TITLE OF INVENTION: HEMATOLOGICAL MALIGNANCIES
CURRENT APPLICATION NUMBER: US,09/796,692
CURRENT FILING DATE: 2001-03-01
PRIOR PEDICATION NUMBER: 60/196,126
PRIOR PELICATION NUMBER: 60/190,479
PRIOR FILING DATE: 2000-03-17
PRIOR PELICATION NUMBER: 60/200,545
PRIOR PELICATION NUMBER: 60/200,545
PRIOR PELICATION NUMBER: 60/200,739
PRIOR PILING DATE: 2000-04-27
PRIOR PELICATION NUMBER: 60/200,779
PRIOR PELICATION NUMBER: 60/200,799
PRIOR PELING DATE: 2000-04-28
PRIOR PELING DATE: 2000-05-01
PRIOR PELING DATE: 2000-05-01
PRIOR PELING DATE: 2000-05-01
PRIOR PELING DATE: 2000-05-01
PRIOR PELING DATE: 2000-05-02
PRIOR PELING DATE: 2000-05-22
PRIOR PELING DATE: 2000-05-22
PRIOR PELING DATE: 2000-05-22
PRIOR PELING DATE: 2000-05-31
PRIOR PELING DATE: 2000-06-04
PRIOR PELING DATE: 2000-06-04
PRIOR PELING DATE: 2000-06-04
PRIOR PELING DATE: 2000-06-04
PRIOR PELING DATE: 2000-08-03
PRIOR PELING DATE: 2000-08-03
PRIOR PELING DATE: 2000-08-04
PRIOR PELING DATE: 2000-08-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-750-240-2 (1-104) x US-09-796-692-6321 (1-280)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2.53
87.00
40.00%
40.00%
15.26%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                92 GGGCCCCAGATGGGT 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  75 GlyPro***LysGly 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM: Homo sapiens
US-09-796-692-6321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
US-09-764-868-1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
```

```
19 TrpGlyGluArgAsn-----GlyGlnLysArgSerArgArgArgGlyThrArgAla 35
                                                                                                                                                                                                                                                                                                                                                                                                                                 55 ProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhelleArgArgGly 74
                                                                                                                                                                                                                                                                                                                             36 Gly---GlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 608, Application US/09925299
Fatent No. US20020055527A1
GENERAL INFORMATION:
TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
FILE REFERENCE: PA102
CURRENT APPLICATION NUMBER: US/09/925,299
CURRENT FILING DATE: 2001-08-10
PRIOR PPLICATION NUMBER: PCT/US00/05883
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR SEQ ID NOS: 1556
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                          US-09-750-240-2 (1-104) x US-09-764-868-1483 (1-16489)
Length:
Matches:
Conservative:
Mismatches:
                                                                                                   Indels:
```

```
176 GGGGACTGTCCTCCTCCTGCCGCGCAACCGAGTGNNNCCTINGCCCCACGGTGCCCC 117
                                                                                                                                                                                                                                         13 AspGluArgLysThrAlaTrpGlyGlu-----ArgAsnGlyGlnLysArgSerArg 29
                                                                                                                                                                                                                                                                                                                                65 TrpGlnAspAspAlaPheIleArgArg---------GlyGlyPro*** 77
                                                                                                                                                                                                                                                                                                                                                                                           398
28
10
35
17
                                                                                                                                     Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                   US-09-750-240-2 (1-104) x US-09-925-299-608 (1-398)
; NAME/KEY: misc_feature
; LOCATION: (377)
; OTHER INFORMATION: n equals a,t,g, or c
; NAME/KEY: misc_feature
; LOCATION: (386)
; OTHER INFORMATION: n equals a,t,g, or c
; LOCATION: (394)
; OTHER INFORMATION: n equals a,t,g, or c
US-09-925-299-608
                                                                                                                                                                                                                                                                                                                                                                                                                         LysGlyLysGluLeuGlyLeuArgAlaVal 87
                                                                                                                                                                                                                                                                                                                                                                                                                                       Search completed: March 1, 2003, 13:39:42 Job time : 67 secs
                                                                                                                                      4.16
86.50
42.228
31.118
15.188
                                                                                                                                                         Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                           Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                          78
                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

17, Appl 19, Appl 21, Appl 10, Appl 4032, Ap

Sequence Seq

234, App 59, Appl 34, Appl 1, Appli 38, Appl 2809, App 2818, Ap 2819, Ap 2810, Ap

sednence sed

17, Appl 1266, Ap

Sequence

Sequence Seq

Sequence Sequence Sequence Sequence Sequence

Total number

Searched:

on:

```
US-10-329-079-34
PCT-US02-37547-56
US-10-144-771-44214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCT-US02-29264-2811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-949-004-589
US-10-144-771-15901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-144-771-1266
US-09-949-004-512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 83, Application PC/TUS0236759 GENERAL INFORMATION:
APPLICANT: INCYTE GENOMICS, INC.
APPLICANT: DUGGAN, Brendan M.
APPLICANT: YANG, Junming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BECHA, Shanya D.
YUE, Henry
LEHR-MASON, Patricia M.
THANGAVELU, Kavitha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIETZEN, Kimberly J.
LEE, Soo Yeun
AZIMZAI, Yalda
WALIAA, Narinder K.
WARREN, Bridget A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KALLICK, Deborah A. GRIFFIN, Jennifer A. ELLIOTT, Vicki S. GORVAD, Ann E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RICHĀRDŠON, Thomas W
MARQUIS, Joseph P.
LAL, Preeti G.
FORSYTHE, Ian J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LEE, Sally
EMERLING, Brooke M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KHARE, Reena
BAUGHN, Mariah R.
GANDHI, Ameena R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LEE, Ernestine A. SWARNAKAR, Anita.
   7193

7193

7193

7349

2349

2349

1622

2224

1622

2229

2230

1196

8495

4495

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

1806

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KABLE, Amy E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRAN, Uyen K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BARROSO,
 PCT-US02-36759-83
                                                                                                                                                                                               89.5
89.5
88.5
88.5
87
87
87
87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
   000
                                                                                                              00000
                                                                                                                                                                                                                                                                                                                           00000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Appl
Appl
Appl
Appl
Appl
Appl
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Appl
                                                                                                                                            (without alignments)
673.833 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1. No. is the number of results predicted by chance to have a re greater than or equal to the score of the result being printed, is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 83, Ap
Sequence 5921,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13,
56,
57,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 78,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1
Sequence 2
Sequence 3
Sequence 5
Sequence 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence (
                                                                                                                                                                                                                                 .....RAVALGFEDTEVTTPAGPL
                                                                                                                       March 1, 2003, 09:07:49 ; Search time 263 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pending_Patents_NA_New:*

1: /cgn2_6/ptodata/2/pna/USO6_NEW_COMB.seq:*

2: /cgn2_6/ptodata/2/pna/USO6_NEW_COMB.seq:*

3: /cgn2_6/ptodata/2/pna/USO7_NEW_COMB.seq:*

4: /cgn2_6/ptodata/2/pna/USO9_NEW_COMB.seq:*

5: /cgn2_6/ptodata/2/pna/USO9_NEW_COMB.seq:*

6: /cgn2_6/ptodata/2/pna/USO9_NEW_COMB.seq:*

7: /cgn2_6/ptodata/2/pna/USO0_NEW_COMB.seq:*

7: /cgn2_6/ptodata/2/pna/USO0_NEW_COMB.seq:*
                    GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                      OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-USO2-36759-83
US-10-144-771-5921
US-60-423-572-78
US-60-427-579-78
US-10-30-230-133
US-10-320-230-133
PCT-USO2-39133-56
PCT-USO2-39133-57
US-11-288-96-6
US-11-289-980-6
                                                                                                                                                                                                                                                                                                                                                                                                        hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                         3936061 seqs, 852009584 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 100%
first 45 summaries
                                                                                                                                                                                                                                                                                    0.5
7.0
7.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7
                                                                                                                                                                                                                                                            BLOSUM62
Xgapop 10.0 , Xgapext (
Ygapop 10.0 , Ygapext (
Fgapop 6.0 , Fgapext Delop 6.0 , Delext
                                                                                                                                                                                                              570
1 MSWFSGLLVPKVDERKTAWG.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100
Listing first 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H 99
                                                                                                                                                                                            US-09-750-240-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1386
5826
4955
11173
11173
11173
11182
11182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95.6
116.2
116.2
115.9
115.9
115.9
115.9
115.9
                                                                                                                                                                                                                                                                                                                                                                                                            of
                                                                                                                                                                                              Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             545
432
92.53
90.5
90.5
90.5
89.5
                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
```

score and is Pred.

Result

4 5 7 7 10 11 11

0 0

Database:

```
ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: BLAAR, JULIE J.,
APPLICANT: BLAAR, MAIN
APPLICANT: AGN, AND
APPLICANT: GAO, JING
TILE REFERENCE: PF-1279 PCT
CURRENT APPLICATION NUMBER: DCT/US02/36/59
FILE REFERENCE: PF-1279 PCT
CURRENT APPLICATION NUMBER: US 60/333, 097
PRIOR APPLICATION NUMBER: US 60/335, 274
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-15
PRIOR FILING DATE: 2001-11-15
PRIOR FILING DATE: 2001-11-14
PRIOR FILING DATE: 2001-11-14
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2001-12-18
PRIOR FILING DATE: 2002-01-11
PRIOR FILING DATE: 2002-01-11
PRIOR FILING DATE: 2002-01-14
SPRIOR FILING DATE: 2002-01-14
PRIOR PRIOR APPLICATION NUMBER: US 60/348, 687
PRIOR PRIOR APPLICATION NUMBER: US 60/348, 687
PRIOR FILING DATE: 2002-01-14
PRIOR FILING DATE: 2002-01-14
PRIOR FILING DATE: 2002-01-14
PRIOR PRIOR APPLICATION NUMBER: US 60/348, 687
PRIOR PRIOR APPLICATION NUMBER: US 60/348, 687
PRIOR PRIOR APPLICATION NUMBER: US 60/348, 687
PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1386
99
0
3
0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-750-240-2 (1-104) x PCT-US02-36759-83 (1-1386)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No: 7506194CB1
PCT-US02-36759-83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels:
Gaps:
HAFALIA, April J.A.
                                                                                                               BHATIA, Umesh
BURRILL, John D.
BLAKE, Julie J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.5e-34
545.00
97.06%
97.06%
                      ISON, Craig H.
JIN, Pei
                                                               JIANG, Xin
JACKSON, Alan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                325 GGCGGG 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alignment Scores:
Pred. No.:
                                                                                                                  APPLICANT:
APPLICANT:
                                                                                             APPLICANT:
                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
APPLICANT: American Home Product Inc.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR DIAGNOSING AND TREATING MAJOR DEP TITLE OF INVENTION: DISORDER
FILE REFERENCE: AMA101250.
CURRENT APPLICATION NUMBER: US/60/423,552
CURRENT FILING DATE: 2002-11-05
NUMBER OF SEQ ID NOS: 256
SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                              21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 5921, Application US/10144771
GENERAL INFORMATION:
APPLICANT: VENTER,
TITLE OF INVENTION: HUMAN GENOME DISCOVERY SYSTEM AND USES THEREOF
FILE REFERENCE: CL001321
CURRENT FAPLICATION NUMBER: US/10/144,771
CURRENT FILING DATE: 2002-05-15
NUMBER OF SEQ ID NOS: 47235
                                                                                                                                                                                                                                                                           Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                US-09-750-240-2 (1-104) x US-10-144-771-5921 (1-5826)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                               Indels:
                                                                                                                                                                                                                                                             Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Sequence 78, Application US/60423552; GENERAL INFORMATION:
                                                                                                                                                                                                                                                            8.16e-25
432.00
85.29%
79.41%
75.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 986
92.50
48.65%
33.78%
16.23%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                             Score:
Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       390 ATGGGC 395
                                                                                                                                                                           ; TYPE: DNA
; ORGANISM: HUMAN
US-10-144-771-5921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                           LENGTH: 5826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 4955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-60-423-552-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-60-423-552-78
                                                                                                                                         SEQ ID NO 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                               Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 3
```

Indels:

Query Match:

RESULT 2

Page

```
635 GCACGCCCCGAGGA-----GCTGCTGGCTCTTGCAGTCCGCGGAGCTTATCTTGCGTG 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28 SerArgArgArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeu 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48 ArgAspAlaGluProPro-----SerProThrProAlaGlyProProArgCys---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Lowe, Keith S.
APPLICANT: Tao, Yumin
APPLICANT: Tao, Yumin
APPLICANT: Gordon-Kamin, William J.
APPLICANT: Gregory, Carolyn A.
APPLICANT: Gregory, Carolyn A.
APPLICANT: McElver, John A.
APPLICANT: McElver, John A.
TITLE OF INVENTION: Gorge J.
TITLE OF INVENTION: and Methods of Use
TITLE OF INVENTION: and Methods of Use
CURRENT FILING DATE: 2002-12-16
PRIOR FILING DATE: 1998-09-23
PRIOR FILING DATE: 1998-09-23
PRIOR FILING DATE: 1998-09-23
PRIOR FILING DATE: 09-23
PRIOR FILING DATE: 09-23
APPLICANT: Hoerster, George J.

TITLE OF INVENTION: Cyclin D Polynucloetides, Polypeptides
TITLE OF INVENTION: and Methods of Use
FILE REFERENCE: 0326
CURRENT PILING DATE: 1999-09-20
CURRENT FILING DATE: 1999-09-20
PRIOR PILING DATE: 1999-09-23
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FASTEED for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                      1173
21
5
12
12
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-750-240-2 (1-104) x US-09-398-858-13 (1-1173)
                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR FILLING DATE: 1999-09-20
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 13, Application US/10320230 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                             90.50
57.78%
46.67%
15.88%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            749 CCGCCGTGGCCGGAG 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64 ---ProTrpGlnAsp 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 285
                                                                                                                                                                                                                                                                                                                           ; LOCATION: (1)...(1173)
US-09-398-858-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ...(1173)
                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                           NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; LOCATION: (1)
US-10-320-230-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                            LENGTH: 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-320-230-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEO ID NO 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 78, Application US/60427579
GENERAL INFORMATION:
APPLICANT: American Home Product Inc.
APPLICANT: American Home Product Inc.
APPLICANT: American Home Product Inc.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR DIAGNOSING AND TREATING MAJOR DEPRES TITLE OF INVENTION: DISORDER
FILE REFERENCE: AM101250L
CURRENT APPLICATION NUMBER: US/60/427,579
CURRENT FILING DATE: 2002-11-20
NUMBER OF SEQ ID NOS: 256
NUMBER OF SEQ ID NOS: 256
SOFTWARE: PATENTIN VERSION 3.1
                                                                                                                                                                                           :::||||::::::
2972 GCCTGGTGGACTATGGCGAGGGTGGCGGTCAGTTCAATGAAGACGGCTCCTTCATCG 3031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3032 GCCAGTACACGGTCAAAAGGACAAGGAGGAAACAGAGGCCAACGAAAGCTCAGAGGCCA 3091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41
                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                   SerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGlyGlu 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 SerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGlyGlu 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22 ArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ArgTyrMetSerCysLeuArgAspAlaGluPro-ProSerProThrProAlaGlyProPr
                                                                                                                                                                22 ArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThrPro
                                                                                                                                                                                                                                               42 ArgTyrMetSerCysLeuArgAspAlaGluPro-ProSerProThrProAlaGlyProPr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4955
25
11
34
4
                                                                                                                                                                                                                                                                                                                                                    3152 ACTITGCAAGTGGGAGGAGGGG-----AGAAGGGGA 3182
                                                                                                                                                                                                                                                                                                                         61 oArgCysProTrpGlnAspAspAlaPheIleArgArgGly 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 oArgCysProTrpGlnAspAspAlaPheIleArgArgGly 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-750-240-2 (1-104) x US-60-427-579-78 (1-4955)
                                         US-09-750-240-2 (1-104) x US-60-423-552-78 (1-4955)
        Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Lowe, Keith S.
APPLICANT: Tao, Yumin
APPLICANT: Gordon-Kamm, William J.
APPLICANT: Gregory, Carolyn A.
APPLICANT: McElver, John A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 13, Application US/09398858 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92.50
48.65%
33.78%
16.23%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Homo sapiens
US-60-427-579-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 4955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-398-858-13
                                                                                                                                                                                                                                                                                                                                                                                                                           US-60-427-579-78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                δ
                                                                                                                                                                                                   q
                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
```

3 10:27:30 2003

Mon Mar

749 CCGCCGTGGCCGGAG 763

```
28 SerArgArgArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeu 47
                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28 SerArgArgArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeu 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48 ArgAspAlaGluProPro-----SerProThrProAlaGlyProProArgCys--- 63
                                                                                                                                                                                                ArgAspAlaGluProPro-----SerProThrProAlaGlyProProArgCys---
                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Tao, Yumin
APPLICANT: Gordon-Kamm, William J.
APPLICANT: Gordon-Kamm, William J.
APPLICANT: Gordon-Kamm, William J.
APPLICANT: MCEIver, John A.
APPLICANT: MCEIver, John A.
APPLICANT: Hoerster, George J.
APPLICANT: Haddock, Sheila E.
TITLE OF INVENTION: Cyclin D Polynucloetides, Polypeptides
TITLE OF INVENTION: and Methods of Use
FILE REFERENCE: 092602
CURRENT APPLICATION NUMBER: US/10/348,110
CURRENT FILING DATE: 1998-09-23
PRIOR FILING DATE: 1998-09-23
PRIOR FILING DATE: 1999-09-20
PRIOR FILING DATE: 1999-09-20
PRIOR FILING DATE: 2002-12-16
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 13
LENGT: 1173
   21
12
7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-750-240-2 (1-104) x US-10-348-110-13 (1-1173)
                                                                                                US-09-750-240-2 (1-104) x US-10-320-230-13 (1-1173)
                                                                                                                                                                                                                                                                                                                                                              Sequence 13, Application US/10348110
GENERAL INFORMATION:
APPLICANT: Lowe, Keith S.
APPLICANT: Tao, Yumin
90.50
57.78%
46.67%
15.88%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 285
90.50
57.78%
46.67%
15.88%
                                                                                                                                                                                                                                                                                               749 CCGCCGTGGCCGGAG 763
                                                                                                                                                                                                                                                                  ---ProTrpGlnAsp 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---ProTrpGlnAsp 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , LUCATION: (1)...(1173)
US-10-348-110-13
                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   =
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: CDS
LOCATION: (1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                 US-10-348-110-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No.:
                                                                                                                                                                                                48
                                                                                                                                                                                                                                                              64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                 δ
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

```
APPLICANT: LES, Sally
APPLICANT: HEALIA, April J.A.
APPLICANT: HEALIA, April J.A.
APPLICANT: TESN, BA
APPLICANT: TESN, BA
APPLICANT: SPRAGUE, Milliam W.
APPLICANT: SPRAGUE, Milliam W.
APPLICANT: GANDHI, Ameena R.
APPLICANT: GANDHI, Ameena R.
APPLICANT: GANDHI, Ameena R.
APPLICANT: GANDHI, Ameena R.
APPLICANT: BHATIA, Umesh G.
APPLICANT: BOWNER: CONDITION DOWNER: COUREWN FILLS OF INVENTION: PROTEINS ASSOCIATED WITH CELL GROWTH, DIFFERENTIATION, AND DEA FILE REFERENCE: FF-1319 PCT
CURRENT FILLS OF INVENTION BY BREE: 2002-12-04
PRIOR PHILNG DATE: 2001-12-20
PRIOR APPLICATION NUMBER: US 60/340, 761
PRIOR APPLICATION NUMBER: US 60/354, 764
PRIOR PILLNG DATE: 2002-01-15
PRIOR PELLNG DATE: 2002-01-15
PRIOR PELLNG DATE: 2002-02-06
PRIOR PILLNG DATE: 2002-02-06
PRIOR APPLICATION NUMBER: US 60/356, 216
PRIOR APPLICANTION NUMBER: US 60/356, 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2877 CCTGGCCGCTCGCAGCGCCTGCGGATCGGGACCGCATCCTGGCAGTAGAACGGCCAAGA 2936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 ProLysValAspGluArgLysThrAlaTrpGlyGluArgAsnGlyGlnLysArgSerArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4884
39
4
42
47
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-750-240-2 (1-104) x PCT-US02-39133-56 (1-4884)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No: 7506414CB1
PCT-US02-39133-56; Sequence 56, Application PC/TUS0239133; GENERAL INFORMATION:
                                                                                        APPLICANT: INCYTE GENOMICS, INC.
APPLICANT: GRIFFIN, Jennifer A
APPLICANT: RAMKUMAR, Jayalaxmi
APPLICANT: BERRIING, Brooke M.
APPLICANT: ELIIOTT, VICKI S.
APPLICANT: MARQUIS, JOSEPH P.
APPLICANT: BANGWIS, JOSEPH P.
APPLICANT: BANGWIS, JOSEPH P.
APPLICANT: GORVAD, Ann E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRAN, Uyen K.
SWARNAKAR, Anita
LEE, Sally
ISON, Craig H.
HAFALIA, April J.A.
                                                                                                                                                                                                                                                                                                                                                                                          YUE, Henry
LEE, Ernestine A.
BECHA, Shanya D.
TANG, Y. Tom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.4e+03
90.50
32.58%
29.55%
15.88%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US02-39133-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
```

Ŋ

a

à

셤

ò

g

ò

à

οy

```
3177 decergeergesagergregergergegggggggggeeceggcaceeeeeeeeeraegga 3236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3297 GGGCCACGCTGGCAACCCCCGGGACCCACAGAGGGCATCTTCATCTCCAAGGTGAG 3356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3072 CCTGGCCGCTCGCAGCGGCCTGCGGGTTGGGGACCGCATCCTGGCAGCGGAACGGGCAAGA 3131
                                                                                                                                                                                                                                                                                                                                                                                                                                                  50 AlaGluPro------ 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----GlyPro 76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77 ***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeuGlyPhe------91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10 ProLysValAspGluArgLysThrAlaTrpGlyGluArgAsnGlyGlnLysArgSerArg
                                                                                                                                                                                                                                                                                                                                                                                                                  30 ArgArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----TrpGlnAspAspAlaPheIleArgArgGly-----
                                                                                                                                                                                                                      Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                             US-09-750-240-2 (1-104) x PCT-US02-39133-57 (1-5079)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92 GluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature; OTHER INFORMATION: Incyte ID No: 7506415CB1 PCT-US02-39133-57
                                                                                                                                                                                    1.47e+03
90.50
32.58%
29.55%
15.88%
                                                   TYPE: DNA
ORGANISM: Homo sapiens
SOFTWARE: PERL Program
SEQ ID NO 57
                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-288-985-6/c
                                                                                                                                                                      Alignment Scores:
                                 LENGTH: 5079
                                                                                       FEATURE
                                                                                                                                                                                         Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: HO, Anne APPLICANT: HO, Anne APPLICANT: APPLICANT: About APPLICANT: Zheng, Wenjin TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL GROWTH, DIFFERENTIATION, AND DEATH FILE REFERENCE: PF-1319 PCT CURRENT APPLICATION NUMBER: PCT/US02/39133 CURRENT FILING DATE: 2002-12-04
                                                                                                                                                                                                                                                        3102 GGGCCACGCTGGCAACCCCCGGGGACCACAGGGGCATCTTCATCTCCAAGGTGAG 3161
                                                                                                                                                                                                                                                                                                                   1162 CCCCACGGGGGAGCCGGGCGGGCGCGCGCGCGCGGGTTTGCGGCTGTTGGAGGT 3221
                                                2937 GIGCGGGAIGCCACGCA--------CCAAGAAGCAGICAGIGCCCIGCICCG 2981
                                                                                                                    2982 GCCCTGCCTGGAGCTGTCGCTGCTGGTGCGGAGGGACCCGGCACCCCCGGGCCTACGGGA 3041
                                                                                                                                                                                    ------GlyPro 76
                ArgArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAsp 49
                                                                                                                                                      ----ProProArgCysPro 64
                                                                                   --ProSerProThr---
                                                                                                                                                                                                                                                                                          77 ***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeuGlyPhe------
                                                                                                                                                                                                                      -----TrpGlnAspAlaPheIleArgArgGly-----
                                                                                                                                                                                                                                                                                                                                                                                              ----CCTGCTGGGCCT 3245
                                                                                                                                                                                                                                                                                                                                                            92 GluAspThrGluValThrThrThrProAlaGlyPro 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT FILING DATE: 2002-12-04
PRIOR APPLICATION NUMBER: US 60/340,747
PRIOR FILING DATE: 2001-12-07
PRIOR PELICATION NUMBER: US 60/342,761
PRIOR PELICATION NUMBER: US 60/349,705
PRIOR PELICATION NUMBER: US 60/349,705
PRIOR PELICATION NUMBER: US 60/354,764
PRIOR PELICATION NUMBER: US 60/354,764
PRIOR FILING DATE: 2002-02-06
PRIOR FILING DATE: 2002-02-06
PRIOR FILING DATE: 2002-02-06
PRIOR FILING DATE: 2002-02-05
NUMBER OF SEQ ID NOS: 66
                                                                                  AlaGluPro------
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 57, Application PC/TUS0239133 GENERAL INFORMATION:
                                                                                                                                                    ------ProAlaGly-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRAN, Bao
SPRAGUE, William W.
LEE, Soo Yeun
KHARE, Reena
GANDHI, Ameena R.
GIETZEN, Kimberly J.
BHATIA, Umesh G.
BURRILL, John D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GRIFFIN, Jennifer A
RAMKUMAR, Jayalaxmi
EMERLING, Brooke M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: INCYTE GENOMICS, INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KABLE, Amy E.
ELLIOTT, Vicki S.
MARQUIS, Joseph P.
BAUGHN, Mariah R.
GORVAD, Ann E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HAFALIA, April J.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YUE, Henry
LEE, Ernestine A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWARNAKAR, Anita
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shanya D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craig H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TANG, Y. Tom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RAN, Uyen K
                                                                                                                                                                                                                                                                                                                                                                                111
3222 GAACCAGCAGAG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LEE, Sally
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            весна,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT
              30
                                                                                  20
                                                                                                                                                    57
                                                                                                                                                                                                                        65
```

```
946 CGGTGAAGCCCATGGGGCCGAACCAGTTCTCGAAGATGAAGCCGCCGCCGCGGGAGGACGCCC 887
                                               35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                             ----GlyProPro----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.6e+03
89.50
49.21%
41.27%
15.70%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: S. Clavuligerus US-10-288-985-1
                                                                                                                                             ProThrProAla-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5442 AGATGTCCA 5450
                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                        62 ArgCysPro 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 ArgCysPro 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 1
LENGTH: 7193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                          US-10-288-985-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
                                                                                                                                             55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55
                                               à
                                                                                         g
                                                                                                                                             δ
                                                                                                                                                                                  g
                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ÓΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55 ProThrProAla-------61
                                                                                                                                                                                                                                                                                                                                                     15 ArgLysThrAlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArg 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                        54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15 ArgLysThralaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArg 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                   35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                     1182
26
5
15
17
                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-750-240-2 (1-104) x US-10-289-980-6 (1-1182)
                                                                                                                                                                                                                                                                                                         US-09-750-240-2 (1-104) x US-10-288-985-6 (1-1182)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-289-980-6/C

| Sequence 6, Application US/10289980
| Sequence 6, Application US/10289980
| GENERAL INFORMATION:
| APPLICANF: Barton, Barry
| APPLICANF: Barton, Barry
| APPLICANF: Barson, Barry
| APPLICANF: Barson, Susan
| APPLICANF: Barson, Susan
| APPLICANF: Barson, Susan
| APPLICANF: Barson, Ashish Sudhakar
| TITLE NET FILENT NOVEL Compounds
| FILE REFERENCE: P31731022
| CURRENT APPLICATION NUMBER: US/10/289,980
| CURRENT FILING DATE: 2002-08-08
| PRIOR FILING DATE: 1998-07-09
| PRIOR FILING DATE: 1998-07-09
| PRIOR FILING DATE: 1998-07-04
| PRIOR FILING DATE: 1998-02-04
| PRIOR FILING DATE: 1997-02-04
| PRIOR FILING DATE: 1998-02-04
| PRIOR FILING DATE: 1997-02-04
| PRIOR FILING DATE: 1998-02-04
| PRIOR FILING DATE: 1997-02-04
| PRIOR FILING DATE: 1998-02-04
| PRIOR FILING DATE: 1997-02-04
| PRIOR FILING DATE: 1998-02-04
| PRIOR FILING DATE: 1997-02-04
| PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
; ORGANISM: Streptomyces clavuligerus
US-10-289-980-6
                                                                                                                                        345
89.50
49.218
41.278
15.708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         345
89.50
49.21%
41.27%
15.70%
                   ; TYPE: DNA
; ORGANISM: S. Clavuligerus
US-10-288-985-6
                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11111111
778 AGATGTCCA 770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 ArgCysPro 64
                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Alignment Scores:
LENGTH: 1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No.:
                                                                                                                                             Pred. No.:
                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
```

```
54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProThrProAla--------GlyProPro------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7193
26
5
115
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-750-240-2 (1-104) x US-10-288-985-1 (1-7193)
Sequence 1. Application US/10288985
GENERAL INFORMATION:
APPLICANT: Barton, Barry
APPLICANT: Griffin, John Patrick
APPLICANT: Griffin, John Patrick
APPLICANT: Griffin, John Patrick
APPLICANT: Jensen, Susan
APPLICANT: Mosher, Roy Henry
APPLICANT: Paradkar, Ashish Sudhakar
ITILE OF INVENTION: Novel Process
FILE REFERENCE: P317333
CURRENT APPLICATION NUMBER: US/10/288,985
CURRENT FILING DATE: 2002-11-06
PRIOR PILING DATE: 1998-08-21
PRIOR FILING DATE: 1997-12-05
PRIOR FILING DATE: 1997-12-05
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
US-10-289-980-1
: Sequence 1, Application US/10289980
```

```
APPLICANT: EXELTION:

TITLE OF INVENTION: RRP SEQUENCES AND KNOCKOUT MICE AND USES THEREOF;
FILE REFERENCE: EX02-004C-PC
CURRENT APPLICATION NUMBER: PCT/US03/01858
CURRENT FILING DATE: 2003-01-22
PRIOR PHILOR DATE: 2003-01-22
PRIOR PLICATION NUMBER: US 10/056,790
PRIOR FILING DATE: 2001-07-18
PRIOR APPLICATION NUMBER: US 60/219,289
PRIOR FILING DATE: 2000-07-19
PRIOR PLILING DATE: 2000-07-19
PRIOR PLILING DATE: 2000-07-19
PRIOR PLILING DATE: 2000-07-19
PRIOR PLILING DATE: 2001-07-14
PRIOR PLILING DATE: 2001-07-14
PRIOR APPLICATION NUMBER: US 60/277,487
PRIOR APPLICATION NUMBER: US 60/277,487
PRIOR APPLICATION NUMBER: US 60/304,863
PRIOR FILING DATE: 2001-07-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5334 AGTGGTGGG------CCTCGC---CGGAGTCCCGGGAGACCAGGACGTCCTTCATCA 5381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7193
26
5
115
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-750-240-2 (1-104) x US-10-289-980-1 (1-7193)
                           APPLICANT: Andersy, Cecilia
APPLICANT: Barton, Barry
APPLICANT: Griffin, John Patrick
APPLICANT: Grason, Susan
APPLICANT: Mosher, Roy Henry
APPLICANT: Mosher, Roy Henry
APPLICANT: Mosher, Roy Henry
APPLICANT: Paradkar, Ashish Sudhakar
TITLE OF INVENTION: Novel Compounds
TITLE OF INVENTION: NOVEL COMPOUNDS:
CURRENT APPLICATION NUMBER: US/10/289,980
CURRENT FILING DATE: 2002-11-07
PRIOR FILING DATE: 1999-07-09
PRIOR FILING DATE: 1998-02-04
PRIOR FILING DATE: 1998-02-04
PRIOR FILING DATE: 1998-02-04
PRIOR FILING DATE: 1998-02-04
NUMBER OF SEQ ID NOS: 19
SOFTWARE: FASELEQ FOR WINDOWS Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 47, Application PC/TUS0301858 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Streptomyces clavuligerus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.6e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89.50
49.21%
41.27%
15.70%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62 ArgCysPro 64
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
PCT-US03-01858-47/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 7193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-289-980-1
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

```
5178 ACCACGCACCTGCTCTGAATGAGCTGCAGCGAGCTCCTCTCTCCATAGAGCCGGGCCG 5119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---CCGCTC 5071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 LysValAspGluArgLys-ThrAlaTrpGlyGluArgAsnGlyGlnLysArgSerArgAr 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77 ***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluVal 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30 gArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAsp--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50 AlaGluProProSerProThrProAlaGly -----ProProArgCys-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64 ------gargargalyGlnAspAspAlaPheIleArgArgGlyGlyPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           34319
35
112
38
25
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 9445, Application US/09724676; GENERAL INFORMATION:
APPLICANT: Compugen LTD
TITLE OF INVENTION: Variants of alternative splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5118 AGGCCGGGGTCGCCCGAGGCCGGGAGGGGCTGCTCTGCGGA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-750-240-2 (1-104) x PCT-US03-01858-47 (1-34319)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
PRIOR FILING DATE: 2001-03-21
PRIOR APPLICATION NUMBER: US60/305,017
PRIOR FILING DATE: 2001-07-12
PRIOR FILING DATE: 2001-07-12
PRIOR FILING DATE: 2001-06-05
PRIOR FILING DATE: 2001-10-06
PRIOR FILING DATE: 2001-10-10
PRIOR FILING DATE: 2001-10-10
PRIOR FILING DATE: 2001-10-10
SPRIOR FILING DATE: 2001-10-10
NUMBER OF SEQ ID NOS: 70
SOFTWARE: PATCHIN VETSION 3.2
SEQ ID NOS: 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5070 CGCTCCGCCCGGCCGGCTC 5047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97 ThrThrThrProAlaGlyProLeu 104 :::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
LOCATION: (34301)..(34301)
OTHER INFORMATION: n is a, c,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΰ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.63e+04
89.00
42.73%
31.82%
15.61%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY:
NAME/K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KEY: misc_feature
LOCATION: (34274)..(34275)
OTHER INFORMATION: n is a,
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-724-676-9445
                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 34319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US03-01858-47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Aliqnment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
Ю
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
```

63

```
1925 TACAGAGACCTCCCTGTTCAAGGCCCCTGACAGCTGTCCCTGC------CCTTCTTC 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32 yThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluPr 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52 oProSerProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhelleAr 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 SerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGlyGlu 21
                                                                                                                                                                                                                                                                                                                                                              Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-750-240-2 (1-104) x US-09-724-676-9445 (1-2349)
FILE REFERENCE: 129181.4 Compugen
CURRENT APPLICATION NUMBER: US/09/724,676
CURRENT FILING DATE: 2000-11-28
NUMBER OF SEQ ID NOS: 97222
SOFTWARE: PatentIn version 3.2
SOFTWARE: PatentIn version 3.2
SOFTWARE: PatentIn version 3.2
TYPE: DNA
ORANISM: Homo sapiens
ORANISM: Homo sapiens
FEATURE:
NAME/KEY: misc_feature
LOCATION: (42)
COTHER INFORMATION: n is a.c.g, or t
FEATURE:
NAME/KEY: misc_feature
LOCATION: (51)...(51)
COTHER INFORMATION: n is a.c.g, or t
FEATURE:
NAME/KEY: misc_feature
LOCATION: (51)...(51)
COTHER INFORMATION: n is a.c.g, or t
USCATION: (51)...(51)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Search completed: March 1, 2003, 13:08:15 Job time : 274 secs
                                                                                                                                                                                                                                                                                                                                                              894
88.50
43.56%
33.66%
15.53%
                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2087 G 2087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92 n 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen Ltd.

```
-MODEL_frame+_p2n.model -DEV-xlh
-MODEL_frame+_p2n.model -DEV-xlh
-MCOFIL_10691_24976/app_query.fasta_1.263
-0-/CGG12_L1VGPPO_spool/J089750240/runat_2502203_103941_24976/app_query.fasta_1.263
-0-CGG12_L1VGPPO_spool/J0899750240/munat_0.1 -LOOPEL_0 -LOOPEXT_0
-UNITS-bits -START=1 -END=-1 -MATRIX-blosum62 -TRANS-human40.cdi -LIST-45
-DOCALIGN-200 -THR_SCORE-CT -THR_MXX-100 -THR_MIN-0 -ALIGN-15 -MODE-LOCAL
-UNFWT-ptc -NORM-ext -HEAPSIZE=500 -MINLEN-0 -MAXLEN-200000000
-USER-US09750240_CGGN_11_1899_C**unat_25022003_103941_24976 -NCPU=6 -ICPU=3
-NO.XLPXY -NO.MANP -LARGEDURRY -NGC_SCORES=0 -WAIT -LONGIAG -DEV_TTMEOUT=120
-WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7
                                                      March 1, 2003, 07:59:04 ; Search time 1708 Seconds
  (without alignments)
986.142 Million cell updates/sec
                                                                                                                                                                             US-09-750-240-2
570
1 MSWFSGLLVPKVDERKTAWG......RAVALGFEDTEVTTPAGPL 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32308132
OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16154066 seqs, 8097743376 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                       0.5
7.0
7.0
                                                                                                                                                                                                                                                                                                                                    Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
Delop 6.0 , Delext
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Command line parameters:
                                                                                                                                                                                                                                                                                                          BLOSUM62
                                                                                                                                                                                Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                             Run on:
```

EST: * Database :

em_gss_other:* em_gss_pro:* em_gss_rod:* em_gss_hum:* em_gss_inv:* em_gss_pln:* em_gss_vrt:* em_estfun:* em_estom:* em_estba:* em_esthum:* em_estpl:*
em_estro:*
em_htc:*
gb_estl:* em_estin:*
em_estmu:*
em_estov:* gb_est2:*
gb_htc:*
gb_est3:* gb_est5:* gb_est4:* db_gss:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	6520 BB866520 6451 BB866451 2334 Tetraodo	60281492 UI-M-BH1			BF696034 601852020 B0716276 AGENCOURT										OI-E		11.5-	EMI	WHE2	MHEZ AL820		BM801345 AGENCOURT			AGENCOU	AGENCAUTA	60109		NRNA linear EST 27-NOV-200	, coion rob-0349 cie-ns cuna nRNA sequence.			raniata, Vertebrata, Euteleostomi; ciurognathi, Muridae, Murinae, Mus.	, Furuno,M., Hanagaki,T., , Hirozane,T., Imotani,K., Ishii
DB ID	10 BB866520 10 BB866451 17 CNS02STX	3 BG91621 0 AW04517	4 BQ80343 7 AG06519	2 BG75676 2 BG55837	2 BF69603 4 BO71627	4 BM94264	2 BE90086	7 BH62542 0 AV69161	3 BJ25556	2 BF58528	7 AG07154	AI861296	3 B16/66/ 1 AY10760	0 BE40083	4 BM70619	7 AG1274 2 RF9246	2 BG01404	2 BG10390 2 BG46308	2 BF48361	4 BQ83816 AL820291	7 CNS0351	4 BM8013	7 BH74635	4 BQ62075 2 BG64954	4 BQ22609	4 BQ92230 AU173954	0 BE2875	ALIGNMENTS	618 bp	e G431005N18 5',	112730	,	Chordata; C Rodentia; S	rakawa,T., Carninci,P., Tramoto,K., Hiraoka,T.,
/ Length	8 618 1 631 2 1011	94 43	125	89	84 104	25	64	36	46	104	106	41	U U	38	51	87	31	0 4 0	59	70	89	107	37	57	107	36	52		Ling World	DNA C	.1 GI:171	ouse. culus	a; Metazoa ; Eutheria = 1 to 618	7 : :
% Query ore Match	32 75. 54 62. .5 35.	.5 22. 12 19.	.5 18.	00 17.	.5 17.	.5 17.	.5 17.	6 16.	5 16.	5 16.	16.	.5	16.	3 16.	3 16.	93 16.	.5 16.	.5 16.	.5 16.	16.	.5 16.	.5 16.	2 16.	2 16.	2 16.	2 16. 5 16.	.5 16.		010	ulu	BB866520 BB866520	house mou	Eukaryota; Mammalia; 1 /bases	kimur ayats
Result No. Sco	321		7 1		п п		J 4		6	19	σ	22	2. 4. 2. 0.	25	27	58 54	30	. 31 32	33	4. ru v ov	36 9	. 6	m •	ササ	4.	6	6		RESULT 1 BB866520 LOCUS	DEFINITION	ACCESSION VERSION	SOURCE ORGANISM	近し、日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日	AUTHORS

```
US-09-750-240-2 (1-104) x BB866520 (1-618)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         331 ATGGGC 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                             21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
BB866451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                              ò
                                                                                                                          d
                                                                                                                                                                             ò
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /Lissue_type="colon"
//Lissue_type="colon"
//Lissue_type="colon"
//Cell_line=RCB-0549 Cle-H3"
//Cell_line=RCB-0540 Cle-H3"
//Cell_line=RCB-0610 JC), (cell_line=RCB-0035 WEHI-3),
(cell_line=RCB-0464 Meth-A), (cell_line=RCB-0545 GWFA),
(cell_line=RCB-0559 K-I FI), (cell_line=RCB-1283 B16
// Cell_type=Leydig cells, cell_line=CRL-1005 WEHI 231
// Cell_type=Nullipotent stem cell, cell_line=CRL-2005 MLTC-1),
(cell_type=Nullipotent stem cell, cell_line=CRL-2005 MLTC-1),
(tissue_type=bladder, cell_line=RCB-0544 MBT-2),
(tissue_type=bladder, cell_line=RCB-0544 WBT-2),
(tissue_type=bladder, cell_line=RCB-0540 Cle-H3), (tissue_type=colon,
cell_line=RCB-0549 Cle-H3), (tissue_type=stidney,
cell_line=RCB-0549 Cle-H3), (tissue_type=stidney,
cell_line=RCB-1734 SCA-9 clone 15), (strain=BALB/C,
cell_type=B cells, cell_line=CRL-1669 BCLI Clone 13.20-3B3)
// Strain=C3H, tissue_type=brain, cell_line=CRL-1443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000) Konno, H., Pukunishi, Y., Shibata, K., Itoh, M., Carninci, P., Sugahara
                              Okido, T.
                                                                                                                                                                                                                                                                                                                                                                                         Email: genome-resegsc.riken.go.jp,
URL:http://genome-gsc.riken.go.jp,
Carninci.p., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh
Carninci.p., Shibata,Y., Hayatsu,N., and Hayashizaki,Y.
Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1617-1630 (2000)
wagi.K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,
Matahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura
Hayashizaki,Y.
,Y., Ito,M., Kawai,J., Kojima,Y., Konno,H., Kouda,M., Matsuyama,T., Nakamura,M., Nishi,K., Nomura,K., Numasaki,R., Okazaki,Y., Okido,T., Salto,R., Sakai,C., Sakai,K., Sakazume,N., Sasaki,D., Sato,K., Shinada,K., Shinaqawa,A., Shiraki,T., Sogabe,Y., Suzuki,H., Tagawa,A., Takahashi,F., Takaku-akahira,S., Tanaka,T., Tomaru,A., Toya,T., Watahiki,A., Yasunishi,A., Muramatsu,M. and Hayashizaki,Y.
                                                                                                                                                                                                                      Contact: Yoshihide Hayashizaki
Laboratoryy for Genome Exploration Research Group, RIKEN Genomic
Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
T-7-22 Suchiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Computer-based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001) Please visit our web site (http://genome.gsc.riken.go.jp) for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="taxon:10090"
/clone="6431005N18"
/clone_llb="RIKEN full-length enriched, colon RCB-0549
Cle-H3 cDNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        618
81
6
13
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. .618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y. and Hayashizaki, Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.82e-28
432.00
85.29%
79.41%
75.79%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189 c
                                                                                                                                                                                                    Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mouse tissues.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BC3H1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
No.:
                                                                                                                                                                                                 JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred.
```

```
RIKEN integrated sequence analysis (RISA) system--384-format RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000) Konno,H., Carninci,P., Shibata,K., Itoh,M., Carninci,P., Sugahara
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sclurognathi; Muridae; Murinae; Mus. 1 (bases I to 631) at to 631.

Akimura, T., Arakawa, T., Carninci, P., Furuno, M., Hanagaki, T., Hayatsu, N., Hiramoto, K., Hiraoka, T., Hirozane, T., Imotani, K., Ishii, Y., Ito, M., Kawai, J., Kolima, Y., Konno, H., Kouda, M., Matsuyama, T., Nakamura, M., Nishi, K., Nomura, K., Numasaki, R., Okazaki, Y., Okido, T., Saito, R., Sakai, C., Sakai, K., Sakazume, N., Sasaki, D., Sato, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Suzuki, H., Tagawa, A., Takahashi, F., Takaku-Akhira, S., Tanaka, T., Tomaru, H., Tagawa, Watahiki, A., Yasunishi, A., Muramatsu, M. and Hayashizaki, Y. Riken Encyclopedia of Mouse Full-length cDNAs (Akimura, T., et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BB866451 RIKEN full-length enriched, colon RCB-0549 Cle-H3 cDNA Mus musculus CDNA clone G431005J18 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: genome-resegsc.riken.go.jp,
URL:http://genome.gsc.riken.go.jp/
Carninol.P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh
Mcanization, and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new
genes. Genome Res. 10 (10), 1617-1630 (2000)
wagi,K., Fujiwake,S., Inoue,K., Togawa,Y., Izawa,M., Ohara,E.,
Watahiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura
,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (2001)
Contact: Yoshihide Hayashizaki
Contact: Yoshihide Hayashizaki
Laboratory for Genome Exploration Research Group, RIKEN Genomic
Sciences Center(GSC), Yokohama Institute
The Institute of Physical and Chemical Research (RIKEN)
1-7-2 Suehiro-cho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan
Tel: 81-45-503-9226
Fax: 81-45-503-9216
Email: genome-res@gsc.riken.go.jp,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrTro 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             214 ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCAGGAGGCGGGCCGGGCCGGGCAGGGTGT 273
                                 41 ProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThrProAlaGlyPro 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 ProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***LysGlyLys 80
                                                                                                                                                        GluargasnGlyGlnLysargSerargargargGlyThrargalaGlyGlyPheCysThr 40
MetSerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BB866451.1 GI:17112661
```

```
Submitted (12-APR-2000)
This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetraodon nigroviridis genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetraodon.

Location/Qualifiers
                                                                                                                                                                                                                Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei; Acanthonorpha; Acanthopterygii; Percomorpha; Tetraodontiformes; Tetraodontidae; Tetraodon: 1 (bases 1 to 1011) (bases 1 to 1011) (bases 2 to 1011) (bases 3 to 1011) (bases 3 to 1011) (bases 4 to 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Roest-Crollius, H., Jalllon, O., Dasilva, C., Fizames, C., Fisher, C., Bouneau, L., Billault, A., Quetier, F., Saurin, W., Bernot, A. and Weissenbach, J. Charaterization and repeat analysis of the compact genome of the freshwater pufferfish Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                          Human gene number estimate provided by genome wide analysis using
Tetraodon nigroviridis DNA sequence
                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
  162F16 of library G from Tetraodon nigroviridis, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21 GluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThr 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41 ProArgTyrMetSerCysLeuArgAsp-----AlaGluProProSer-----Pro 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56 ThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhelleArgArgGlyGly 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone_lib="G"
/note="Genoscope sequence ID : COAG162DC08SP1-end :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----CGGAGGGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1011
46
10
17
17
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="162F16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            175 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76 Pro***LysGlyLysGluLeuGlyLeuArgAla 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CT-CCATCAGCACCACGG--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83 GGGGCCGTGGGGGGGGGGCGAACTTCGGAGT 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-750-240-2 (1-104) x CNS02STX (1-1011)
                                                      AL212334
AL212334.1 GI:7871153
GSS; genome survey sequence.
Tetraodon nigroviridis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.14e-08
200.50
61.54%
50.55%
35.18%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 1011)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 1011)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PUC-Ori"
a 297 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genoscope
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alignment Scores:
                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No.:
                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="colon"
/cell_line="RCB-0549 Cle-H3"
/note="pooled cell lines; (cell_line=CRL-1751 WEHI 164),
(cell_line=RCB-0464 Meth-A), (cell_line=RCB-0035 WEHI-3),
(cell_line=RCB-0559 K-1. F1), (cell_line=RCB-1283 B16
melanoma), (cell_type=B cells, cell_line=RCB-1283 B16
melanoma), (cell_type=Leydig cells, cell_line=CRL-1702 WEHI 231
), (cell_type=Leydig cells, cell_line=CRL-2065 MITC-1),
(tissue_type=bone marrow, cell_line=RCB-0544 MBT-2),
(tissue_type=bone marrow, cell_type=stroma cell,
cell_line=CRL-2028 SR-4987), (tissue_type=scolon,
cell_line=CCB-0549 Cle-H3), (tissue_type=scolon,
cell_line=CCB-0549 Cle-H3), (tissue_type=submandibular gland,
cell_line=CRL-1734 SAA-9 clone 15), (strain=BALB/C,
cell_type=B cells, cell_line=CRL-1669 BCL1 Clone 13.20-3B3
), (strain=C3H, tissue_type=brain, cell_line=CRL-1443)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCUS CNSO2STX 1011 bp DNA linear GSS 15-MAY-2000 DEFINITION Tetraodon nigroviridis genome survey sequence PUC-Ori end of clone
                                                         ದ
                    Computer-based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of nonredundant cDNA library. Genome Res. . 11 (2), 281-289 (2001) Please visit our web site (http://genome.gsc.riken.go.jp) for further details.
                                                                                                                                                                                                                                       /organism="Mus musculus"
/db_xref="taxon:10090"
/clone="g431005J18"
/clone_lib="RIKEN full-length enriched, colon RCB-0549
Cle-H3 cDNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97 GAACTCTTTGGGCAGAAGCGCCCA---CGCCACGCTAATCGAGCCAGTGGCTTCTGCGCG 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81 GluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrThrTrr 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 631
69
7
24
2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-750-240-2 (1-104) x BB866451 (1-631)
                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       174 g
Y. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.26e-21
354.00
74.51%
67.65%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    217 c
                                                                                                                                                                mouse tissues
                                                                                                                                                                                                                      1. .631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          101 AlaGly 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              331 ATCGGC 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
CNS02STX/C
LOCUS
                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
```

q

Qγ

g

δy a òγ

δ

Q

ò g δ qq

```
/db xref="taxon:1000"
/db xref="taxon:1000"
/clone="UI-M-BHI-alh-a-03-0-UI"
/clone="UI-M-BHI-alh-a-03-0-UI"
/clone="UI-M-BHI-BMAP_M_S2"
/dev_stage="27-32 days"
/dev_stage="27-32 days"
/lab_host="1000 [Life Technologies]"
/lab_host="1
                                                        AW045174 11-8-SP-1999 UI-M-BH1-alh-a-03-0-UI.SI NIH_BMAP_M_S2 Mus musculus cDNA clone UI-M-BH1-alh-a-03-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oligo-dT track not found, Not I site shown in beginning of sequence is likely internal to the message. CDNA Library Preparation: M.B. Soares Lab Clone distribution: NIH BMAP CDNA clones will be made available by the means that is soon to be determined. When NIH eccord will be updated accordingly when that means is determined. The following repetitive elements were found in this cDNA sequence: 94-126, SG_rich#Low_complexity
Seq primer: Mi3 Forward
POLYA-NO.
                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 430)
                                                                                                                                                                                                                                                                                                                                                                       Bonaldo,M.F., Lennon,G. and Soares,M.B. Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---LeuValProLysValAspGluArg 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Chin, H
National Institute of Mental Health
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda, MD
20892-9643, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            430
34
7
38
18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .430
/organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                     discovery .
Genome Res. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-750-240-2 (1-104) x AW045174 (1-430)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /strain="C57BL/6J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: mEST@mail.nih.gov
                                                                                                                                                 AW045174
AW045174.1 GI:5905703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MetSerTrpPheSerGlyLeu---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.52
112.00
42.278
35.058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 301 443 1706
Fax: 301 443 9890
                                                                                                                                                                                                                                                            Mus musculus
                                                                                                                                                                                                                                    mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ==:::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                    house
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
  RESULT 5
AW045174/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
Q
                                                                                      DEFINITION
                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
MEDLINE
COMMENT
                                                                                                                                              ACCESSION
                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sall; S1ste_2: NOt1; Cloned unidirectionally. Friner: Oilgo dT. Library constructed by Life Technologies. Investigators providing samples: Lothar Hennighausen/Priscilla Furth, NIH Reference for transgenic model: Li et al., Cell Growth and Differentiation 7, 3-11 (1996)."
                                                        BG916212 941 bp mRNA linear EST 05-JUN-2001 602814927F1 NCI_CGAP_Mam4 Mus musculus cDNA clone IMAGE:4937095 5',
                                                                                                                                                                                                                                                      Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 941)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM10870 row: f column: 08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Príscilla Furth
Ph.D.
                                                                                                                                                                                                                                                                                                                                                                 NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28 CAGCGACGTCTGCTCACATGAGCTGCCGTCAACAGAATGTCGGAGACACGGACACCGAGCA 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20 lyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCys- 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         40 -----ThrProArgTyrMetSerCys------LeuArgAspAlaGluProProS 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     54 erProThrProAlaGly ... -- - ProProArgCysProTrpGln 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              941
38
6
21
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="IMAGE:4937095"
/clone_lb="NoI_CGAP_Mam4"
/tissue_type="tumor, gross tissue"
/dev_stage="5 months"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
/strain="NMRI"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 151.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x BG916212 (1-941)
                                                                                                                                                                   BG916212.1 GI:14296688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0.143
127.50
57.148
49.358
22.378
                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 941
                                                                                                             mRNA sequence.
                                                                                                                                                                                                                              house mouse,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
                                                                                                                                                                                                   EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
                                                                                                                                     ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
RESULT 4
BG916212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
```

움 à

ò g õ g ò

Mon Mar

```
Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSS
                                                                                                                              Query Match:
                                                Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                       12
                                                                                                                                                                                                                                                                                                                                                                                                         47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AG065197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                         δy
                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="Vernalized apex"
/dev_stage="One month old plants"
/dev_stage="Cone month old plants"
/dev_stage="Cone month old plants"
/dev_stage="Cone month old plants"
/dev_stage="Cone month old plants were
subjected to vernalization treatment by placing them in
the cold room at 6 c, under 15hr light/9hr dark condition.
The cold room as prepared from apex tissue extracted from
plants with no cold treatment; and from plants with 2-week
/d week and 6 week cold treatment separately. Equal
amount of total RNA was pooled from all four samples, a
cDNA library was made using pooled polyA RNA and cDNA
clones were in vivo excised at the University of
California, Davis (V. Echenique, B. Stamova, J. Dubcovsky
). Plasmid DNA preparations and DNA sequencing were
performed in the Ob Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (2002)
Contact: Olin Anderson
US Department of Agriculture, Agriculture Research Service, Pacific 800 Buchanan Street, Albany, CA 94710, USA
                                                                                                                                                                                                                                                                                                                                                                                                                         BQ803437 697 LEST 30-JUL-2002 WHE2837_F07_K132S Triticum monococcum vernalized apex cDNa library triticum monococcum cDNA clone WHE2837_F07_K13, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Triticum monococcum
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; Pooideae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tititiceae; Triticum.

1 (bases 1 to 697)

Anderson,O.D., Chao,S., Crossman,C., Dubcovsky,J., Echenique,V.,
Lazo,G.R., Pham,J., Rausch,C.J., Stamova,B., Wilson,C. and Woo,J.
The structure and function of the expressed portion of the wheat genomes - Vermalized apex cDNA library from Triticum monococcum
                                                                                                                                                                                                                                   351 CTGCGAGCCTGGAGCGTCCCTGGTCACCAGCATAGACACCCAAGGAGGCGTAGATATTCG 292
                                                                                                                                                                      291 ACTCTGGGGCCCATCTGCTCGCAGACAAGGGTCACGTCAGGGCACACTGCCCACCCTAGG 232
411 GTTTCTTGGCCTGATGGCCTGCCTGGGCACATGCATCGGCAGCCACCCGTGGAAGAGCGA 352
                                         16 LysThralaTrpGlyGluArgAsnGlyGlnLysArg-----SerArgArgArgGlyThr 33
                                                                                                                            34 ArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProPro 53
                                                                                                                                                                                                               Ser------ProThrProAlaGlyProProArgCysProTrpGlnAspAsp 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequences have been trimmed to remove vector sequence and low quality sequence with phred score less than 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cultivar="63116"
/db_xref="taxon:4568"
/clone="WHE2837_F07_K13"
/clone_lib="Triticum monococcum vernalized apex cDNA
                                                                                                                                                                                                                                                                                                                                        171 GGCTTTCCCACCAAGCTTGCACGCATCACACGCTCCTGGCCCGTTGCGGGC 121
                                                                                                                                                                                                                                                                                                AlaPhe----**LysGly 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .697
/organism="Triticum monococcum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BQ803437
BQ803437.1 GI:22018406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seq primer: SK primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Triticum monococcum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel: 5105595773
Fax: 5105595818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                       BQ803437/c
                                                                                                                                                                                                                                                                                                                                                                                                                           LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                   RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
  g
                                         δ
                                                                              g
                                                                                                                                                             Db
                                                                                                                                                                                                           δý
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                            ò
```

```
and Chemical Research (RIKEN), Genomic Sciences Center (GSC); 1-7-22 Suehiro-chou, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mall:chimpbes@gsc.riken.go.jp, URL.http://hgp.gsc.riken.go.jp/, Tel:81-45-503-9111, Fax:81-45-503-9170)
Clones are derived from the chimpanzee BAC library PTB This BAC end was generated during the R&D process and may have higher chance of clone tracking errors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AG065197 1259 bp DNA linear GSS 03-NOV-2001
Pan troglodytes DNA, clone: PTB-054103.F, genomic survey sequence.
AG065197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           troglodytes male lymphoblast DNA, clone_lib:PTB Chimpanzee Male
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Pan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2. (bases i to 1259)
Eliyama, A., Hattori, M., Toyoda, A., Taylor, T.D., Yada, T.,
Totoki, Y., Watanabe, H. and Sakaki, Y.
Direct Submission
Submitted (02-AUG-2001) Asao Fujiyama, The Institute of Physical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  519 ACCACCGCGACGCCGCTTTCTTGGGGCTAGCCGTCGCGGCCAGGGCGGTGATCTGCTCG 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             579 CCGTGCAGACTGCACCGGCCCATGCCGAAGCCCTCCACCGCCACGTCCTGTGCCGTGAAG 520
                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63 -------CysProTrpGlnAspAspAlaPheIleArgArgGlyGlyPro***Ly 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     78 sGly-LysGluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAspThrGluValThrT 98
                                                                                                                                                                                                                                        ArgLysThrAlaTrp-GlyGluArg-----AsnGlyGlnLysArgSerArgArgArgGl
                                                                                                                                                                                                                                                                                                                                                                                                                                             Fujiyama,A., Hattori,M., Toyoda,A., Taylor,T.D., Yada,T.,
Totoki,Y., Watanabe,H. and Sakaki,Y.
BAC end sequences of Library PTB
697
40
3
43
41
5
                                                                                                                                                                                                                                                                                                                                     32 yThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCys-
                          Matches:
Conservative:
                                                                                Mismatches:
        Length:
                                                                                                          Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Library clone: PTB-054I03.F.
                                                                                                                                                                                     US-09-750-240-2 (1-104) x BQ803437 (1-697)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AG065197.1 GI:16616999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Vector : pKS145
R.Site 1 : SacI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing: -21M13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          345 TGGTCGATGGTGCTCCA 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hrThrProAlaGlyPro 103
  5.84
107.50
33.86%
31.50%
18.86%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59 yProProArg-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pan troglodytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIMERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LIBRARY
                                                        Percent Similarity:
```

```
/clone="IMAGE:4850910"
/clone=lib="WIMI_MGC_48"
/clone=lib="WIMI_MGC_48"
/tissue_type="primary B-cells from tonsils (cell line)"
/lab_host="DH100 (phage-resistant)"
/lab_host="DH100 (phage-resistant)"
/note="Organ: B-cells; Vector: pOTB7; Site_1: XhOI;
Site_2: EcoRI; cDNA made by oligo-dT priming.
Site_2: EcoRI; cDNA made by oligo-dT priming.
Directionally cloned into EcoRI/XhOI sites using the following 5' adaptor: GGCACGAG(G). Size-selected >500bp for average insert size 1.8kb. Library constructed by Ling HONg in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-cDNA synthesis kit (Stratagene) and Superscribt II RT (Life Technologies).
Note: this is a NIH_MGC Library." I others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG558370 278 bp mRNA linear EST 10-APR-2001
RHIZ2_66_E02.bl_A003 Rhizome2 (RHIZ2) Sorghum propinguum cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cordonnier-Pratt, M.-M., Gingle, A., Paterson, A., Sudman, M. and Pratt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sorghum propinguum
Sukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  811 GGTCTGCTTCAGCCCAAGAGGATTCAAAAGATCAAAACAGTTTGGGAAGCCAGAACCCGT 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              700 CIGGGITGAAGGGAITGCCCICCCCTGCIGGGAICCCCCCAGCCCTCG-----GTC 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 751 CAAGGGATGGAGAGAAAGGAAAATCCAGGGGTTGGGGGTTCTGT-----TTGCAA 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  646 TGGCAGGAAGGGGGCAGCCTGCAACCCCCAAGGGCAGGTGTGGGCUTGCCAGATGCTCCA 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 GlyLeuLeuValProLys---ValAspGluArgLysThrAlaTrpGlyGluArgAsnGly 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25 GlnLysArgSerArgArgArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TrpGlnAspAspAlaPheIleArg----ArgGlyGly----------------------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SerCysLeuArgAspAlaGluProProSerProThrProAlaGlyProProArgCysPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Laboratory for Genomics and Bioinformatics
The University of Georgia, Department of Plant Biology
Plant Sciences Building, Rm. 2502, Athens, GA 30602-7271, 1
Tel: 706 542 1860
Fax: 706 583 0210
Email: mmpratt@uga.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   An EST database from Sorghum: Sorghum propinguum rhizomes Unpublished (2000)
Contact: Cordonnier-Pratt MM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77 ***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeuGlyPheGluAsp
                                                                                                                                                                                                                                                                                                                                                          897
32
11
40
14
                                                                                                                                                                                                                                                                                                                                                                                              Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                               Matches:
                                                                                                                                                                                                                                                                                                                                                        Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-750-240-2 (1-104) x BG756761 (1-897)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seq primer: JEN REV
High quality sequence start: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.
BG558370
BG558370.1 GI:13587368
                                                                                                                                                                                                                                                                                                                                                     33.1
100.00
44.33%
32.99%
17.54%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sorghum propinguum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 278)
                                                                                                                                                                                                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                         192
                                                                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local S
Query Match:
                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
BG558370/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                     Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Inumau.

EWaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 897)

National Institutes of Health, Mammalian Gene Collection (MGC)

National Institutes of Health, Mammalian Gene Collection (MGC)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-rémail.nih.gov

Tissue Procurement: Louis M. Staudt, M.D., Ph.D.

CONTAINTY Preparation: Ling Hong/Rubin Laboratory

CDNA Library Arrayed by: Tre 1.M.A.G.E. Consortium (LLNL)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the 1.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov

Plate: LLCM1692 row: o column: 07

High quality sequence stop: 811.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG756761 897 bp mRNA linear EST 15-MAY-2001 602710232F1 NIH_MGC_48 Homo sapiens cDNA clone IMAGE:4850910 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               684 AGCGGCGCCGCGCGCGCGCGCGCGCGCCGCGGGAAAATGGGACGGGACGAGCGGG 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   804 CGCCGCCACGCGCANATNAACACGCCCCGCAGGCGCGCGGGGGGCGCCCCGACGGCACGCCC 863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17 ------ThralaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgGly 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52 o-----ProSerProThrProAlaGlyProProArgCys-ProTrpGlnAspAspA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33 ThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAsp-AlaGluPr
                                                                                                                                                                     C Library"
others
                                                                                                                                                                                                                                                                     1259
31
9
35
35
19
                                                                                                                                                                     BAC
22 o
                                                           /organism-"Pan troglodytes"
/db_xref="taxon:9598"
/Glone="PTB-054103.F"
/sex="male"
/cell_type="lymphoblast"
/cell_type="lymphoblast"
a 474 c 564 g 26 t 22
                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SerGlyLeuLeuValProLysValAspGluArgLys-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69 laPhelleArgArgGlyGlyPro***LysGlyLysGlu 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                               US-09-750-240-2 (1-104) x AG065197 (1-1259)
    te 2 : SacI.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
BG756761
BG756761.1 GI:14067414
                                                                                                                                                                                                                                                                     33.6
101.50
42.55%
32.98%
17.81%
                                          .1259
    R.Site 2
                                                                                                                                                                                                                                                                                                                            Best Local Similarity:
                                                                                                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST
                                                                                                                                                                                                                                                                                                                                                        Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                              Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                       Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG756761/c
                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                          Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
Homo sapiens
                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human,
                                                                                                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                            Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                           ..
No
                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
BQ716276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

E 1 (bases 1 to 842)
National Institutes of Health, Mammalian Gene Collection (MGC)
L Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: ATCC
CDNA Library Preparation: CLONETECH Laboratories, Inc.
CDNA Library Preparation: CLONETECH Laboratories, Inc.
CDNA Library Preparation: CLONETECH Laboratories, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
                                                 1. .278
//organism="Sorghum propinguum"
/db_xref="taxon:132711"
/clone_lib="Rhizome2 (RHIZ2)"
/note="Organ: Rhizomes; Vector: pBluescript II from Lambda apa II; Site_l: Khol; Site_2: EcoRi; The library was made from poly-A RNA in the cloning vector lambda ZAP II.
clones to be sequenced were prepared by mass excision."
a 126 c 66 g 45 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601852020F1 NIH_MGC_56 Homo sapiens cDNA clone IMAGE:4075829 5', BF696034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         222 GGATTCTGCACGGCGGCGAGGGCCCTGGTAGTGGTACTGGTGC---GGGCCCCCG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                               273 GCGTGG-----AGAGGCAGGTGGAAGGGGAGGGGAAAGGGGTGCAGGCCCTGGCTG 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37 GlyPheCysThrProArg------TyrMetSerCysLeuArgAspAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51 GluProProSerProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhe
                                                                                                                                                                                                                                                                                                                                                                                                                            18 AlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArgAlaGly---
                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71 IleArgArgGlyGlyPro***LysGlyLysGluLeuGly 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plate: LLCM928 row: h column: 06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4075829"
/clone_lib="NIH_MGC_56"
                                                                                                                                                                                                                                                                                                                                                           Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 High quality sequence stop: 188.
Location/Qualifiers
quality sequence stop: 218
                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-2 (1-104) x BG558370 (1-278)
                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BF696034.1 GI:11981442
                                                                                                                                                                                                                                                                  12.2
99.50
49.32$
39.73$
17.46$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                              41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human.
                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST.
                                                                                                                                                                                                                                                                                                                                           Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                              SASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 10
BF696034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
```

```
/tissue_type="primitive neuroectoderm"
/lab_host="DH10B (TI phage-resistant)"
/note="Organ: brain; Vector: pDNR-LIB (Clontech); Site_1:
SfiI (gyccotcuggcc); Site_2: SfiI (gyccattatggcc);
SfiI (gyccattatggcc); Site_2: SfiI (gyccattatggcc);
Double-stranded cDNA was prepared from cell line RNA. 5'
and 3' adaptors were used in cloning as follows: 5'
adaptor sequence: 5'-CACGGCCATTATGGCC; and 3' adaptor
sequence: 5'-ATTCTAGAGGCCGAGGCGGCCATG-dT(30)BN-3'
(where B = A, C, or G and N = A, C, G, or T). Average
insert size 1.65 kb (range 0.9-4.0 kb). 15/15 colonies
contained inserts by PCR. This library was enriched for
full-length clones and was constructed by Clontech
Laboratories (Palo Alto, CA)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGENCOURT_8296836 Lupski_sympathetic_trunk Homo sapiens cDNA clone IMAGE:6194275 5', mRNA sequence.
BQ716276
BQ716276.1 GI:21855173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: Dr. James R. Lupski
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM13599 row: d column: 20
High quality sequence stop: 454.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. II (bases 1 to 1048)
III (Marse tttp://mgc.nci.nih.gov/. National institutes of Health, Mammalian Gene Collection (MGC) (Uppublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          378 CGGCGGCCGGGCCGTGGAAGTGTCCAGGGCCGATGACCAAGAACTTCGCAGGTCCGGC 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36 GlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSerPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17 ThrAlaTrpGlyGluArgAsnGlyGlnLySArgSerArgArgArg---GlyThrArgAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         318 GGGGGCCTCCCCCAAATTCCCCTATGGAGAAGCTGGGGGCTCTAAAGAGCCCCGAGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56 ThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPheIleArgArgGlyGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   842
26
5
36
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-750-240-2 (1-104) x BF696034 (1-842)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    438 CAGAGTGGTGAGGCTGAGGGGGGT 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76 Pro***LysGlyLysGluLeuGly 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34.4
99.50
45.59%
38.24%
17.46%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .1048
```

ω

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                     BM942641 255 bp mRNA linear EST 29-APR-2002 UI-M-CG0p-bdb-c-10-0-UI.rl NIH_BMAP_Ret4_S2 Mus musculus cDNA clone UI-M-CG0p-bdb-c-10-0-UI 5', mRNA sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus Sukaryota; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Musia is 1 to 255)
Bonaldo, M.F., Lennon, G. and Soares, M.B.
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        839 ACGGGAGGGAGCCCGTGCCTGGAACGCGGGGGGACCGCCGGAACGCCGGGGC 898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tissue Procurement: Dr. Xin-Yuan Fu, Yale University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                    26 LysargSerargArgArgGlyThrArgAlaGlyGlyPheCysThrProArgTyrMetSer 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pGlnAspAspAla---PheIleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLe 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     779 GCCCAGAGGGGGCCCCCCCCGGGGGCCCCCCGGGGGGCACCGGGCCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46 CysLeuArg-AspAlaGluProProSerProThrProAlaGlyProProArgCysProTr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Chin, H
National Institute of Mental Health
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda, MD
70892-9643, USA
Tel: 301 443 9890
Fax: 301 443 9890
                                                                                                                                                                                                                                                     4 others
              /clone_lib="Lupski_sympathetic_trunk"
/sex="male"
                                           /tissue_type="sympathetic trunk" /dev_stage="adult, 16 yr"
                                                                                                                                                                                                                                                                                                                Length:
Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                             Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                    109 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genome Res. 6 (9), 791-806 (1996)
/clone="IMAGE:6194275"
                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-750-240-2 (1-104) x BQ716276 (1-1048)
                                                                                                                                                                                                                                                  374 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: mEST@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BM942641.1 GI:19402504
                                                                                                                                                                                                                                     rechnologies.
                                                                                                                                                                                                                                                  370 c
                                                                                                                                                                                                                                                                                                              42.2
99.50
55.56%
38.10%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                house mouse.
                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                     Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             899 CCGCGCC 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84 uArgAla 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BM942641
                                                                                                                                                                                                                                                  191
                                                                                                                                                                                                                                                                                                Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST.
                                                                                                                                                                                                                                                                                                                ..
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BM942641/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                  ORIGIN
```

Pred. Score:

ŏ a ò g à g ò a

```
/crganian="Mus musculus"
/strain="C57BL/6J"
/db_xref="Laxon:1009"
/clone="U1-M-C50p-bdb-c-10-0-UI"
/clone="U1-M-C50p-bd-c-10-0-UI"
/clone="U1-M-C50p-bd-c--U1-M-C50p-bd-c-10-0-UI"
/clone="U1-M-C5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE981360 272 bp mRNA linear EST 29-APR-2002 UI-M-CG0p-bdb-c-10-0-UI.s1 NIH_BMAP_Ret4_S2 Mus musculus cDNA clone UI-M-CG0p-bdb-c-10-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
cDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa
                     DNA Sequencing by: Dr. M. Bento Soares, University of Iowa Clone Distribution: Researchers may obtain clones from Research Genetics (www.resqen.com).

The following respectitive elements were found in this cDNA sequence: 201-248, >GC_rich#Low_complexity

Seq primer: M13 REVERSE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 272)
Bonaldo,M.F., Lennon,G. and Soares,M.B.
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        156 TGGCCTCCTCATTGCCCGTGACCTTGAAGAGCGCTTGAACTCGTGCATGAAGAGCGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255
24
2
2
19
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20 GlydluArgAsnGlyGlnLysArgSerArgArgArgGlyThr-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genome Rs. 6 (9), 791-806 (1996)
97044477
Contact: Chin, H
National Institute of Mental Health
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-750-240-2 (1-104) x BM942641 (1-255)
                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57 ProAlaGlyProProArgCysPro 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE981360
BE981360.1 GI:10650389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16.8
97.50
38.24%
35.29%
17.11%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match:
                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
BE981360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
```

```
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence.
BH625429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
BH625429/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                  TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                REFERENCE
                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / Strain="C57BL/G1"
/ Ob xref="Laxon:10090"
/ Clone="U1-W-C50P-bdb-c-10-0-U1"
/ Clone="U1-W-C50P-bd-c-10-0-U1"
/ Clone="U1-W-C50P-bd-c-10-U1"
/ Clone="U1-W-C50P-bd-c-10-U1"
/ Clone="U1-W-C50
                                                                                                                               Oligo-dr track not found, Not I site shown in beginning of sequence is likely internal to the message. CDNA Library Preparation: M.B. Soares Lab Clone distribution: Researchers may obtain BMAP CDNA clones from RESEARCH GENETICS. It should be noted that Bento Soares is generating a small number of additional specialized non-redundant arrays of BMAP CDNAs whose availability will be considered under appropriate and limited collaborative arrangements The tissue for this library was contributed by Dr. Xin-Yuan Fu, Yale University School of Medicine The following repetitive elements were found in this CDNA sequence: 1-62,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE900861 645 bp mRNA linear EST 29-SEP-2000 601673832F1 NIH_MGC_21 Homo sapiens cDNA clone IMAGE:3956958 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCGGCGCGCGGCGGCAGTGCAGACAAGGAGGCTCGGAACATGCTCTCTACATACTGGC 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     107 TGGCCTCCTCATTGCCCGTGACCTTGAAGAAGCGCTTGAACTCGTGCATGAAGAGCGTCC 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ------ArgAlaGly 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             37 GlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSerProThr 56
  θ
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20 GlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThr-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          272
24
2
2
19
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-750-240-2 (1-104) x BE981360 (1-272)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAG_SEQ=None found"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCCGGCCGCCTCCTCCC 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ProAlaGlyProProArgCysPro 64
                                                                                                       Email: mEST@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                    >GC_rich#Low_complexity
Seg primer: M13 Forward
POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE900861.1 GI:10389459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17.9
97.50
38.24%
35.29%
17.11%
                       20892-9643, USA
Tel: 301 443 1706
Fax: 301 443 9890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA sequence.
BE900861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
Ю
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
BE900861
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

```
/note="Organ: Diacenta; Vector: pOTB7; Site_1: Xho1; Site_2: ECORI; CDNA made by Oligo-dT priming.
Directionally cloned into BCORI/Xho1 sites using the following 5' adaptor: GGCACGAG(G). Size-selected >500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of California, Berkeley) using ZAP-CDNA synthesis kit (Stratagene) and Superscript II RT (Life Technologies)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GSS 30-JAN-2002
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.

Marianal Librational Libration (MGC)

Mational Institutes of Health, Mammalian Gene Collection (MGC)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-rémail.nih.gov

Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                               CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: image.llnl.gov Plate: LLCM833 row: o column: 07 High quality sequence stop: 584.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       262 ACAGAGACCTCCCTGTTCAAGGCCCCTGACAGCTGTCCCTGC------CCTTCTTCC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           367 AGGGGAGGAACAGGGAAGGGG---GAGCTGGGGAGCTTGGCTGAGGGTCTGGGAAATGAG 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :::||| ||| |||| ::::::
142 GCATGGGTTAGTGCTATGGAGGAGTACATTGAAGGCCTGGAATTAGCTTGGGGCCCAG 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    202 GAAGGGACTGGGAGGGGAGGAAGAGAAGGAGGGAAGGATTAGGATGGTAAAGTTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 SerTrpPheSerGlyLeuLeuValProLysValAspGluArgLysThrAlaTrpGlyGlu 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----ArgArgGly 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         33 ThrArgAlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluPro 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53 ProSerProThrProAlaGlyProProArgCysProTrpGlnAspAspAlaPhelleArg 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArgAlaValAlaLeuGlyPheGlu 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BH625429 366 bp DNA linear GSS 30 1007107209.x1 1007 - RescueMu Grid H Zea mays genomic, DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               645
33
10
12
15
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="choriocarcinoma"
/lab_host="DH10B (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches:
Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22 Arg-----AsnGlyGlnLysArgSerArg-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:3956958"
/clone_lib="NIH_MGC_21".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-750-240-2 (1-104) x BE900861 (1-645)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40
97.50
43.00%
33.00%
17.11%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .645
```

```
Zea mays
Eukaryota: Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC
clade; Panicoideae; Andropogoneae; Zea.
1 (bases 1 to 366)
Walbot,V.
                                                                                                                              Maize genomic sequences found using engineered RescueMu transposon Unpublished (2001) Contact: Malbot \nu
                                                                                                                                                                                   Stanford University
855 California Ave, Palo Alto, CA 94304, USA
Fax: 650 723 8221
Email: walbot@stanford.edu
Very probable ligation site of ends cut by single endonuclease.
Reverse complemented post-ligation sequence from source sequence.
Plate: 1007107 column: 29
Class: transposon-tagged.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          246 CTGCGCCGTTGCGGAACGCCGGGAGCTTCCCGGAACTCCGGGAAGCTCCCGGCCCCCCGCGG 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             186 CCGCCGCGGAACGCTGCGCCGAGGAGGAACACGGCGAGGAGGACGCGCATTGCGTCCCCGG 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15 ArgLysThrAlaTrpGlyGluArgAsnGlyGlnLysArgSerArgArgArgGlyThrArg 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35 AlaGlyGlyPheCysThrProArgTyrMetSerCysLeuArgAspAlaGluProProSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70 ------PhelleArgArgGlyGlyPro***LysGlyLysGluLeuGlyLeuArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55 ProThrProAlaGlyProProArgCysProTrpGlnAspAspAla-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   366
28
7
37
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                        Department of Biological Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-750-240-2 (1-104) x BH625429 (1-366)
 GI:18438680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31.8
96.00
42.68%
34.15%
16.84%
вн625429.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
Best Local Similarity:
Query Match:
                               Zea mays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 86 AlaVal 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No.:
                                                                                                               AUTHORS
TITLE
JOURNAL
COMMENT
             KEYWORDS
SOURCE
                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                     FEATURES
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
```

```
|||
| 126 GATGTC 121
       ВÞ
```

Search completed: March 1, 2003, 11:35:39 Job time : 1713 secs

Type V adenylyl cy Human adenylyl and Drosophila melanog Adenylyl cyclase t Human adenylyl and

Human type V adeny

Cardiac adenylyl

AAQ95540 AAQ37543 AAA53922

AAD28058 ABL07501 AAA53918

AAD28061 AAA53926

ABL1

Adenylyl cyclase C Drosophila melanog Human cDNA sequenc Human secreted pro

Type III adenylyl Type VIII adenylyl Human pancreatic c Type VII adenylyl

AAD34078 AAA53920 AAA53925

Human adenylate cy Human adenylate cy Human NS cDNA sequ Rat adenylyl cycla

Adenylyl cyclase t Human adenylate cy Human adenylate cy Human polynucleoti

AAD31190 ABL90026 ABL29627

AAA53919 AAS02694

AAT14528

AAD31191 ABL39754 AAD06820

AAD28057 ABL02755 ABN89298

AAA53921

ABL16645 AAF33100 AAT35209

ABA14228 ABL14977 ABV25672

AAX00463

Drosophila melanog Type IV adenylyl c Human adenylyl and Drosophila melanog Human adenylate cy Human secreted pro

Drosophila melanog

type IX aden Drosophila melanog Human prostate exp

Human

Human nervous

Murine adenylate

```
8884.6
8884.6
8799
4458
878.2
4458
4458
4458
333.3
333.2
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333.6
333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
   O
                                                                                                                                                                                                                   February 28, 2003, 19:58:51; Search time 259.906 Seconds (without alignments) 15700.357 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A. SIDSZ/gcgdata/geneseq/genesegn-embl/NA1980.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1981.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1981.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1981.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1983.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1985.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1985.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1985.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1989.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1989.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1989.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1989.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1989.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1992.DAT:*

SIDSZ/gcgdata/geneseq/genesegn-embl/NA1992.DAT:*

SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1992.DAT:*

SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:*

SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*

SIDSZ/gcgdata/geneseq/geneseqn-embl/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                    US-09-750-240-3
1812
1 gttaacgtggtgctgggcat......gcagctttcctgaggtgttc 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS2/gcgdata/geneseq/geneseqn-embl/NA2002.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                       version 5.1.3
- 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2185239 seqs, 1125999159 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                              GenCore
Copyright (c) 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                         Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
```

```
Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylate cyclase; cAMP synthetase; adenylatese; adenylatese; G-protein receptor kinase; GKK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ss.
                                                                                                                                                                                                                                                                                                                   /*tag= a /product= "Human partial cardiac ACVI isoform #2" /product= "CDS does not include start and stop codon" /EC_number= "4.6.1.1"
                                                                                                                                                 Human partial cardiac adenylcyclase VI (ACVI) isoform #2 cDNA
ALIGNMENTS
                                                                                                                                                                                                                                                                                       Location/Qualifiers
1..1812
                                                                 AAD08562 standard; cDNA; 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                26-DEC-2000; 2000WO-US35411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0472667
                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                          WO200148164-A2
                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-DEC-1999;
                                                                                                                       04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                    05-JUL-2001
```

Human cardiac aden Human cardiac aden Human cardiac aden Human type VI aden Human modified car Cardiac adenylyl c Type VI adenylyl c Mouse ischemic co

AAX00461 AAD08568 AAQ42525 AAA53923 ABI99680

22 22 22 22 24 24 24 24

100.0 100.0 99.8 97.3 97.3 91.5 84.3 79.3

1812 1808.4 1763.4 1763.4 17657.8 1657.8 1527.8

m 4 10 0 1 8 0

3549 3552 4942 3582 4046 4131 5841

AAD08562 AAV23246 AAD08563 AAD08567

Human partial card

```
cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic signalling proteins (beta-ASP) which increase generated responsiveness within the mycardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and 6-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian heart failure. The present congestive heart failure. The present congestive has human partial cardiac adenylcyclase VI (ACVI) isoform which is used for generating a third beta-ASP transgene, used in the exemplification
                                                                                                                                     lynucleotide encoding a modified adenylylcyclase polypeptide or enhancing cardiac function in mammalian hearts, and for heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                            present invention relates to methods and compositions for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1812 BP; 361 A; 539 C; 507 G; 405 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1812; I
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                          English
                                                                                                                                                                                                         5; Page 115-119; 153pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                   CALIFORNIA
                                                                                                                                     polynucleotide
l for enhancing
                                                   Σ
                                                                                   2001-418260/44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                   Gao
                                                                                                     P-PSDB; AAE04309
                                                                                                                                                                                                                                                                                                                                                                                                                                                  the invention
                 UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Simi
Matches 1812;
                                                   HK,
                                                                                                                                                                         treating
                   ~
                                                                                                                                                                                                          Example
                                                   Hammond
                                                                                                                                       Novel puseful
```

enhancing

CCGCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACG 120 180 CTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCAT 180 240 240 Gaps 9 9 CTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCAT TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCC 1812; ; 0 61 61 121 81 181 a ö ò qq ò g ò g

300 300

241 241

ò g

360 420 420 480 480 540 540 9 GTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTG CAGCATGAGAATCGGCAGCAGCAGCGGCTGCTGTCGGTATTGCCCCAGCACGTTGCC **ATGGAGATGAAAGACATCAACACAAAAAAAAGAAGACATGTTCCACAAGATCTACATA** CAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCA TCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGAC 301 301 361 361 421 421 481 541 541 ò QQ ò ద g g à ò ò

9

1020 1080 1140 1200 1260 1260 1380 1380 1500 1560 1560 1620 1680 1500 720 720 780 780 840 840 900 960 GTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTA GACATGAGGCCATCTCGCTGGTACGTGACGTGACAGGTGTGAATGTGAAACATGCGC GATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGC CGCATCCACATCCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCA GCCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATC CGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGG ACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGG GITGCCTGTGCCCTGTTGGTCTTCTGCTTCTGCTTCATCTCCAGCTTCTAATTTTCCCA 1441 CACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTGATCACCGTG CACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTG GEGITTACTICTGCCATGCCAACATGTTCACCTGTAACCACCCCCCATACGGAGCTGT AAGCTGCCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGT GACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGC GTGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTC 841 GATGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGC CTGGGCGCCAGCCAGAAACGGAAAAAGAGAGAAAAGGCATGCTGGCCAAGCTGCAGCGGACT GATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTC CAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTAC CTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC CGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTT CGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTT GTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCATACGGAGCTGT 661 721 1021 1141 1141 601 1081 1261 1321 1441 721 841 901 961 196 1081 1201 1201 1261 1381 1381 1501 1501 1561 199 781 901 1321 1561 1621 Qy Dp QY g δ P q ŏ 셤 οy g ò g g δy Db ŏ g g Dp q δý ò Q Qγ δ οy g δy g δ a Q g Qγ q

ö

ö

```
1096
                                                                                                                                                                                                                                                                                                Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                          376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
  00000x8
                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ÓΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence encodes human adenylylcyclase isoform VI (AC-VI) from the present invention. The present invention describes a recombinant replication-defective viral particle (I) comprising a gene encoding a beta-adrenergic signalling protein (beta-ASP) operably linked to a promoter. Also described are: (1) a recombinant pro-viral plasmid (Is) comprising a gene encoding a beta-ASP, as above, operably linked to a promoter and further comprising a replication-defective viral genome; (2) a (mammalian) cell transfected with (I) or (Is); (3) an isolated polynucleotide comprising a sequence encoding a human adenylylcyclase isoform VI (AC-VI), or a variant having AC activity; (4) a human AC-VI encoded by (3); (5) an isolated polynucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; adenylylcyclase VI; AC-VI; beta-adrenergic signalling protein; transgene; gene therapy; congestive heart failure; cardiac function; adenovirus; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          r transgene(s) encoding beta-adrenergic signalling for gene therapy of congestive heart failure
                                                                                                                                AATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          χb.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag= a // Atag= a //
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       indicates a gap of about 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post SR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human adenylylcyclase isoform VI encoding cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
1..2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 60; Fig 12A; 114pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                     BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (COLL-) COLLATERAL THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Insel PA,
                                                                                                                                                                                                                                                                                                                                                                                                  AAV23246 standard; cDNA; 2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97WO-US15610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97US-0048933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96US-0708661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 σū
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag=
/note=
                                                                                                                                                                                                                                           CCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gao M, Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1998-193633/17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; AAW53345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9810085-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-JUN-1997;
05-SEP-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-MAR -1-998
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAV23246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (REGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vectors
                                                                                                  1741
                                                                                                                                                          1741
                                                                                                                                                                                                               1801
                                                                                                                                                                                                                                                                 1801
                                                                                                                                                                                                                                                                                                                                       RESULT 2
AAV23246
ID AAV23246
AAV22A
AAV2A
AA
                                            g
                                                                                                    ò
                                                                                                                                                    g
                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                      q
```

```
435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
sequence which hybridises at high stringency to (3); and (6) a vector comprising the polynuclectide of (3). (1) can be used to form a filtered adenovirus particle preparation. (1) is used to enhance cardiac function in mammals.
                                                                                                                                                                                                                       316 GTTAACGTGGTGCTGGGCATCCTGGCGGCAGTCGGGGGGCGCGTTTCGCAGAC 375
                                                                                                                                                                                                                                                                             CCGCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACG 120
                                                                                                                                                                                                                                                                                                                                                    CTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCAT 180
                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                   Gaps
                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                  GTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCCA
                                                                                                                                                                                                        GTTAACGTGGTGCTGGGCATCCTGGCGGCAGTCCAGGTCGGGGGCGCCTTTCGCAGCAGCACA
                                                                                                                                                                                                                                                                                                                                                                          CTCCTCCCCATCCGCATGCGGGCTGCCGTCTCAGCGGCCTGGGCCTCTCCACCTTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                              TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGGAGATGAAAGAAGACATCAACACAAAAAAAAAAGAAGACATGTTCCACAAGATCTACATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGGCATCCACAGCGGGCGCGTGCACTGCGGGCGTTGGCTTGCGGAAATGGCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGTGTGTCCAATGATGTGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGC
                                                                                                                                                                 ;
0
                                                                                                                               DB 19; Length 2127;
                                                                                                                                                                   Indels
                                                                                            T; 2 other;
                                                                                                                                                                   .
0
                                                                                                                           s; Score 1812; I
s; Pred. No. 0;
0; Mismatches
                                                                                            452
                                                                                            637 C; 615 G;
                                                                                                                               100.0%;
                                                                                                                               Query Match 100.
Best Local Similarity 100.
Matches 1812; Conservative
                                                                                            Sequence 2127 BP; 421 A;
```

```
g
                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                     1575
                                                                                                                                                                          1500
                                                                                                                                                                                                                                                                                       2115
                                                                                                                                                                                                                                                        CGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCA 1275
         GGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATC
                                                                                                              GATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTC
                                                                                                                                       CTGGGCGCCAGCCAGAAACGGAAAGAGGAAAGGCATGCTGGCCAAGCTGCAGCGGACT
                                                 CGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGG
                                                                      ACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGG
                                                                                                                                 CAGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTAC
                                                                                                                                                                         CACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTG
                                                                                                                                                                                                                                    GTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGT
                                                                                                                                                                                             CTGATCTGTGCTGTGTTCTCTGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC
                                                                                                                                                                                                                 CGCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTT
                                                                                                                                                                                                                                                                                                                                                                 Human cardiac adenylcyclase VI (ACVI) isoform #1
                                                                                                                                                                                                                                                                                                                                    ВР
                                                                                                                                                                                                                                                                                                                                   DNA; 3549
                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                CCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                      AAD08563 standard;
                                                                                                                                                                                                                                                                                                                                                       04-SEP-2001
                                                                                                                                                                                                                                                                                                                                             AAD08563;
                   1276
                                       1336
                                                 1081
                                                           1396
                                                                      1141
                                                                               1456
                                                                                          1201
                                                                                                    1516
                                                                                                              1261
                                                                                                                       1576
                                                                                                                                 1321
                                                                                                                                           1636
                                                                                                                                                               1696
                                                                                                                                                                         1441
                                                                                                                                                                                  1756
                                                                                                                                                                                                                          1876
                                                                                                                                                                                                                                                                  1996
                                                                                                                                                                                                                                                                                      2056
                                                                                                                                                                                                                                                                                                          2116
                             1021
                                                                                                                                                     1381
                                                                                                                                                                                             1501
                                                                                                                                                                                                       1816
                                                                                                                                                                                                                1561
                                                                                                                                                                                                                                    1621
                                                                                                                                                                                                                                              1936
                                                                                                                                                                                                                                                        1681
                                                                                                                                                                                                                                                                            1741
                                                                                                                                                                                                                                                                                                1801
          961
                                                                                                                                                                                                                                                                                                                        RESULT 3
AAD08563
음
          à
                   g
                             ò
                                    qq
                                                 o
d
                                                                   ò
                                                                             qq
                                                                                        oy
Oy
Oy
                                                                                                                    g
                                                                                                                                 Q Q
                                                                                                                                                 ò
                                                                                                                                                           g
                                                                                                                                                                     δ
                                                                                                                                                                               QQ
                                                                                                                                                                                            P Q
                                                                                                                                                                                                             δ
                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                      δŽ
                                                                                                                                                                                                                                                                           ò
```

```
failure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             enhancing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylyicyclases (also referred as adenylycyclases, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present DNA sequence encodes human cardiac adenylcyclase VI (ACVI) isoform which is used for generating a third beta-ASP transgene, used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243 TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACTATCCAGCAGGT 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                    isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     696 GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTGTATACATCGCATACACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123 CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCCTGGGCCCTCTCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183 GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 TAACGIGGIGCIGGCATCCIGGCGCCAGIGCAGGICGGGGGGGCGCTTICGCAGCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTGTATACATCGCATACACGCT
                                                                                       heart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 3549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
Human; cardiant; beta-adrenergic signalling protein; beta-AS mycoardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylylsyclase; adenylylate cyclase; cAMP synthetase; effortein receptor kinase; GRK; heart disease; congestive he cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene;
                                                                                                                                                                                                                                                                                                              "Human cardiac adenylcyclase VI
r= "4.6.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3549 BP; 699 A; 1025 C; 1061 G; 764 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1808.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 5; Page 122-129; 153pp; English.
                                                                                                                                                                                                                          Location/Qualifiers
1..3504
/*tag= a
                                                                                                                                                                                                                                                                                                              /product= "H
/EC_number=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99.8%;
ilarity 99.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US35411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-418260/44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; AAE04310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the invention
                                                                                                                                                                                                                                                                                                                                                                                                   WO200148164-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-DEC-2000;
                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1809;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
```

ó

S

```
TTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCC 1802
                                                                                                                                                                                                                                                                                                                                                       "Human cardiac adenylcyclase VI isoform
                                                                                                                                                                                                                                                                                       GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG
                                                                                                                                                                                                                         TGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACA
                                  GATCTGTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCCTGCAACGTCTGTCCCG
                                                                                                                                                                                                          CAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGT
                                                                                                                                                                                                                                                                        GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC
                                                                               CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylytycyclase; adenylate cyclase; cAMP synthetase; G-protein receptor kinase; GKK; heart disease; congestive heart cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cardiac adenylcyclase VI (ACVI) isoform #2 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /EC_number= "4.6.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAD08567 standard; DNA; 3552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000WO-US35411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag= a
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-418260/44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAE04311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W0200148164-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   нк,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hammond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human
                                                                                                                                                                                                                                                                                                                                                                                                    1743
                  1383
                                                2016
                                                                               1443
                                                                                                           2076
                                                                                                                                             1503
                                                                                                                                                                                                        1563
                                                                                                                                                                                                                                      2196
                                                                                                                                                                                                                                                                        1623
                                                                                                                                                                                                                                                                                                      2256
                                                                                                                                                                                                                                                                                                                                     1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               THE STATE OF THE S
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                      원
                                                                            ζ
                                                                                                     8
                                                                                                                                   δ
                                                                                                                                                                    g
                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1595
                                                                                                           1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGG 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            962
                             CATGATTGAGGCCATCTCGCTGGTACGTGACGTGACAGGTGAATGTGAATGCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATGATTGAGGCCATCTCGCTGGTACGTGACGGTGTGACAGGTGTGAATGTGAACATGCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGCGCCAGCCAGAAACGGAAAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGGT
                                                                                                                                                                                                                       GAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATC
                                                                                                                                                                                                                                                                                     CCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                 GTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGTGTGGAGATGGGGGGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGCCGGAAATGGCAGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGT
                                                                                           GCATGAGAATCGGCAGCAGCAGCGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCAT
                                                                                                                                                          1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1776
 876
                                                                                                                                                                                                                                                     1116
                                                                                                                                                                                                                                                                                                                   1176
                                                                                                                                                                                                                                                                                                                                                                                  1236
                                                                                                                                                                                                                                                                                                                                                                                                                                              1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1956
                               303
                                                                                           363
                                                                                                                          966
                                                                                                                                                          423
                                                                                                                                                                                                                      483
                                                                                                                                                                                                                                                                                     543
                                                                                                                                                                                                                                                                                                                                                  603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        963
                                                                                                                                                                                                                                                                                                                                                                                                                 663
g
                                                          g
                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                             QY
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dβ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                             ^{\circ}
                                                                                                                    g
                                                                                                                                                                                     셤
                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                         ò
                                                                                                                                                       ò
```

failure;

#5"

2435

m

Mar

Mon

Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -

Page 134-140; 153pp; English Claim 6;

The present invention relates to methods and compositions for enhancin cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylytcyclases (also referred as adenylcyclases adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present DNA sequence encodes human cardiac adenylcyclase VI (AVVI) isoform which is used for generating a fourth beta-ASP transgene, used in the exemplification the invention

Sequence 3552 BP; 686 A; 1037 C; 1068 G; 761 T; 0 other;

ä 1355 1235 629 122 302 695 182 815 242 875 935 GTCTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA 362 995 422 479 599 Gaps 62 GCGCAGCCCCTCTGCGGGCCTCTGGTGCCTTCTTTGTATACATCGCATACACGCT 1056 GGAGATGAAAGAAGACATCAACAAAAAAAAGAAGAAGATGTTCCACAAGATCTACAT CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCCACCTTGCATTT GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGGGT TGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGT GGAGATGAAAGAACACATCAACACAAAAAAAAGAAGAC - - - ATGTTCCACAAGATCTACAT ACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGC 540 ATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGA CAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTG Score 1763.4; DB 22; Length 3552; Pred. No. 0; 0; Mismatches 21; Indels 3; Ouery Match 97.3%; Best Local Similarity 98.7%; Matches 1789; Conservative 966 480 ო 123 756 183 816 243 876 936 009 1296 63 303 363 423 099 ò g δ q ò g g ŏ 9 g qq g g ò ò ò οy οy δy Db Qγ g ò

1499 1475 1019 1079 1259 1439 2195 1679 839 899 1356 AGACATGATTGAGGCCATCTCGCTGGTACGTGACAGGTGACAGGTGAAACATGAACTGAAACATGCG TCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCG GACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCG AGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCG CGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGG AGGCCGTGGTGGCAAGGCGCAACGCGTACCTCAAGGAGCAGCACATTGAAGACTTTCCTCAT CCTGGGCGCCAGCCAGAAACGGAAAGAGAAAAGGCATGCTGGCCAAGCTGCAGCGGAC GGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGAGTTCCTGAGCCGTGCCAT CGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTCTGCTCACCTT CCAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTA CGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCTGCTTCATCATCTAATTTTCCC ACACTCCACCCTGATGCTTGGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGT TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCCATACGGAGCTG TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTG CAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTT CCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCC CGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTT GCTGATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTC 1416 1476 1656 1080 1140 1200 1836 1260 1896 1380 1440 2076 1500 1560 2196 2256 720 840 960 1320 2136 780 006 g δλ q ò qq δ g ò g δý Dp ò g ò В ŏ g δ g δy Dp δ g δý g ò g ò g δy g Ω qq q

Mon Mar

```
This DNA sequence encodes human type VI adenylyl cyclase (hAC6, see AAW3059) that is expressed mainly in the heart and brain. hAC6 has a similar putative structure to other adenylyl cyclase isoforms but, like type V, is distinguishable in that it has a larger N-terminus and a relatively shorter C-terminus as it lacks the C2b region. hAC6 cDNA was initially isolated from a human heart CDNA. Library using an adenylyl cyclase PCR fragment as probe. It was the full-length cDNA sequence. The invention relates to the hAC6 gene, methods for the recombinant production of purified hAC6 and the proteins made by these methods, antibodies against hAC6. Vectors, probes and host cells (especially HEK-293) transformed by genes encoding polypeptides having hAC6 activity, along with can be used as a tool to screen for agonists and antagonists that stimulate/inhibit hAC6. Such compounds have therapeutic utility and intransaction in transformed by aberrant activity of this enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Newly isolated and purified human type VI adenylyl cyclase (hAC6) by/peptide - useful for identifying potential therapeutic agents that modulate hAC6 activity, and for the diagnosis of hAC6-associated diseases and disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and diseases whose symptoms can be ameliorated by stimulating or inhibiting the activity of hAC6.
                                                                                                                                                                                                                                               Adenylyl cyclase type VI; human; hAC6; therapy; diagnosis; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4942 BP; 953 A; 1404 C; 1512 G; 1073 T; 0 other;
                                                                                                                                                                                                                 Human type VI adenylyl cyclase cDNA
                                                                                                                                                                                                                                                                                                            Location/Qualifiers
145..3651
/*tag= a
                                                                                                                AAX00461 standard; cDNA; 4942 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 3; Fig 1A-I; 42pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (CORT-) COR THERAPEUTICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97us-0886550,
                                                                                                                                                                                                                                                                                                                                                                                                                                               98WO-US13694
                                                                                                                                                                                  (first entry)
1800 TCCTGAGGTGTTC 1812
                                  2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-106049/09.
P-PSDB; AAW30599.
                    2436 TCCTGAGTACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tomlinson JA;
                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                               21-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                               WO9901547-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                               14-JAN-1999
                                                                                                                                                AAX00461;
                                                                                           ò
                              Op
```

```
1681
                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1802 TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAGGCCATGCTGGCCAAGCTGCAGCGGACTC 1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCTTCTCCCGGA 1141
                                                                                                                                                                                                   304
                                                                                                                                                                                                                                                       364
                                                                                                                                                                                                                                                                                                             424
                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                        901
                                                                                         125 TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGA 184
                                       124
                                                                                                                                                                                                                                                                                                                           1142 ATGAGAATCGGCAGCAGGAGCGGCTGTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                1742 GCCGTGGTGGCGAGCGCAACGCGTACCTCAAGGAGCAGCACTTGATTGTTCCTCATCC
185 TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                             1022 IGCIGCIGITCCICIGCACCAACGICATIGGCAICIGCACACACIAICCAGCAGAGGIGI
                                                                                                                                                                                                                                                                       AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1382 AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           782 TGGGCATCCACAGGGGGGGGGGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              842 ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGCGCCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC
                                                                                                                                                                                                   245 IGCIGCIGITCCICIGCACCAACGICATTAGCATCIGCACACACTATCCAGCAGAGGIGT
                                                                                                                                                                                                                                                        CTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                            365 ATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                  425 AGATGAAAGAAGACATCAACACAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         542 CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTGGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  662 TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                       482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1082
                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       862
                                       à
                                                              셤
                                                                                         δλ
                                                                                                               g
                                                                                                                                               δ
                                                                                                                                                                       g
                                                                                                                                                                                               οy
                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                     δŽ
                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                         οý
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
```

ij

3;

DB 20;

Score 1763; DB Pred. No. 0; Mismatches

97.38; 98.78;

st Local Similarity 98.7 tches 1788; Conservative

Query Match

æ

```
05-JUL-2001
                                                                                                                                                                                                                                 .nvention
                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                               363
                                                                                                                                                                                                                                                                                                                                                                                          243
                                                                                                                                                                                                                                                                                                                                                                                                                                 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         423
                                                                                                                                                   The
 Q
                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                δý
                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ó
                                                                                                                                                                                                                                                                                                                                                                                                     Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylylcyclase; adenylate cyclase; cAMP synthetase; G-protein receptor kinase; GKK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ss.
GGGCCAACTCCATGGAAGGGCTGATGCCGCGCTGGGTTCCTGATCGTGCCTTCTCCGGGA 1921
                                                                                                                 AGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                               GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTG
                                                                                                                                                                                                                        TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACCCCCATACGGAGCTGTG
                                                                                                                                                                                                                                                  CCAAGGACTCCAAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG
                                      GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGCATCCTGAGCCGTGCCATCG
                                                               ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC
                                                                                                                                           ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                     TGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC
                                                                                                                                                                                                                                                                                                                                                                                          Human modified cardiac adenylcyclase VI (ACVI) isoform cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers 22..3525
                                                                                                                                                                                                                                                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                                                                  AAD08568 standard; cDNA; 3582
                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /*tag=
                                                                                                                                                                                                                                                                                                      CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                 CTGAGTACTTC 2592
                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                                             04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic.
                                                                                                                                                                                                                                                                                                                                                                AAD08568;
                                                                                                                                                                    1502
             1142
                                      1202
                                                  1982
                                                               1262
                                                                            2042
                                                                                         1322
                                                                                                     2102
                                                                                                                                           1442
                                                                                                                                                       2222
                                                                                                                                                                                               1562
                                                                                                                                                                                                           2342
                                                                                                                                                                                                                        1622
                                                                                                                                                                                                                                                  1682
                                                                                                                                                                                                                                                                            1742
                                                                                                                                                                                                                                                                                        2522
                                                                                                                                                                                                                                                                                                                 2582
1862
                                                                                                                                                                                                                                                                                                     1802
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ношон
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Key
                                                                                                                                                                                                                                                                                                                                            AAD08568
                                                                                                                                                                                                                                                                                                                                      RESULT
셤
            ò
                        d
                                   δ
                                               g
                                                             ò
                                                                        8
                                                                                    ð
                                                                                                  g
                                                                                                             oy
og
                                                                                                                                        9
9
                                                                                                                                                               δ
                                                                                                                                                                             q
                                                                                                                                                                                             ò
                                                                                                                                                                                                       9
                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                        οχ
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                g
```

```
present invention relates to methods and compositions for enhancing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ARP is used for enhancing cardiac function in mammalian heart failure. The present congestive heart failure. The present congestive heart failure. The ACVI isoform which is used for generating a beta-ASP transgene, used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          303 GTCTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              657 TTACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTCTCGCAGCAGACCC 716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTTGTATACATCGCATACACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123 CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              183 GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGATGAAAGAAGACATCAACACAAAAAAAAGAAGAC---ATGTTCCACAAGATCTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 TAACGTGGTGCTGGCGATCCTGGCGGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 22; Length 3582;
/product= "Human modified cardiac ACVI isoform'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3582 BP; 703 A; 1036 C; 1067 G; 776 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1657.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 4; Page 143-150; 153pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91.5%;
                                                                                                                                                                                                                            99US-0472667
                                                                                                                                                                     2000WO-US35411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 91.5
Best Local Similarity 95.4
Matches 1730; Conservative
                                                                                                                                                                                                                                                                                (REGC ) UNIV CALIFORNIA.
                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2001-418260/44.
                                                                                                                                                                                                                                                                                                                                       Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; AAE04312
                                                         WO200148164-A2
                                                                                                                                                                     26-DEC-2000;
                                                                                                                                                                                                                            27-DEC-1999;
                                                                                                                                                                                                                                                                                                                                       Hammond HK,
```

```
A canine heart cDNA library was constructed in lambda gt10 and was screened with a 970 bp AatI-HincII fragment from type I adenylyl cyclase cDNA probe (enrodes the first cytoplasmic domain of adenylyl cyclase, which has significant homology to other previously known types of adenylyl cyclase). One positive clone, of 5.4 kb was obtd. Positive colonies were subcloned into pUC18 and further subcloned and sequenced bidirectionally. The 5.4 kb clone was used to rescreen the library and on averlapping clone contg. the 5' end of the gene was isolated. Together the two clones cover the complete canine cardiac adenylyl cyclase gene. The gene is suspected of being involved in the regulation of cardiac function and it is thought that decreased activity of adenylyl cyclase in the heart may be a major factor in the development of heart failure. Thus the adenylyl
                                                                                                                                                                                                                                                                                                                                                                                  Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAR37309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-OCT-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-NOV-1991;
                                                                                                                                                                                                                                                                                                                 14-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shikawa Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP543137-A.
                                                                                                                                                                                                                                                                                            AAQ42525
                                                                                                                                                                                                            2454
          1560
                                                     1620
                                                                            2274
                                                                                                  1680
                                                                                                                        2334
                                                                                                                                             1740
                                                                                                                                                                   2394
                                                                                                                                                                                        1800
                                                                                                                                                                                                                                                          AAQ42525
ID AAQ4
                                                                                                                                                                                                                                                                                                                                                                                                          key
20S
                                                                                                                                                                                                                                               RESULT 7
                                                                                                                                                                  g
                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                 g
                                                                                                                      QQ
                                                                                                                                                                                        δλ
                                                     ŏ
                                                                       g
                                                                                              ò
                                                                                                                                             ò
                                                                                                                                                                              1376
                                                                                                                                                                                                                                                           TGTGGGCATCCACAGGGGACGTGTGCATTGCGGCGTCCTTGGCCTACGGAAATGGCAGTT 1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGG 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTT 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTA 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCAT 1019
                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGGGCGCCAGCCAGAAACGGAAAGAGAGAAAGGCATGCTGGCCAAGCTGCAGCGGAC 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCAT 1259
GGAGATGAAAGAAGACATCAACACAAAAAAAAAGAAGACATGATGTTCCACAAGATCTACAT 1136
                                                                                                            629
                                                                                                                                                        719
                                                                                                                                                                                                                                               839
                                                                                                                                                                                                                                                                                            899
                                                                                                                                                                                                                                                                                                                                      959
                                                                                                                                                                                                                                                                                                                                                    ACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACGT
                                                                                                                                                                             CGTGTCAGGGCTGCCCGAGGCCCGGGCAGATCACGCCCACTGCTGTGTGGAGATGGGGGT
                                                                                                                                                                                                     AGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCG
                                                                                                                                                                                                                                               CGTGGGCATCCACAGCGGGGGGCGCGTGCACTGCGGGGGCGTTGCGGAAATGGCAGTT
                                                                                                                                                                                                                                                                                            CGATGTGTGTGCTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGG
                                                                                                                                                                                                                                                                                                                                      CCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1674 ACTIGGCGCCAGCCAAAAAGGAAAAGGAGAAAGCCAIGCIGGCCAAGCITCAGCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACACTCCACCCTGATGCTTGGGATCTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGT
                     ACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGC
                                                                 ATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGA
                                                                                                            CAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTG
                                                                                                                                                        TGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGGAGATGGGGGT
                     480
                                                                                                                                                                             1317
                                                                                                                                                                                                                                                                    1437
                                                                                                                                                                                                                                                                                            840
                                           1137
                                                                                     1197
                                                                                                                                 1257
                                                                                                                                                                                                                         1377
                                                                                                                                                                                                                                                                                                                1497
                                                                                                                                                                                                                                                                                                                                                            1554
                                                                                                                                                                                                                                                                                                                                                                                                      1614
                                                                                                                                                                                                                                                                                                                                                                                                                              1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2154
                                                                 540
                                                                                                            009
                                                                                                                                                        099
                                                                                                                                                                                                   720
                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                  096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                        g
                                                                                                                               g
                                                                                                                                                                        g
                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δy
                  ŏ
                                                                ò
                                                                                 g
                                                                                                         à
                                                                                                                                                      δ
                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

```
1679
                                                                                                                                                                                                                                                   2453
                                                                                                                                          1739
CCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCT 1619
                  TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTG
                                                                                                                                                                                                                   CAATTACTCTCTGGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Purified DNA encoding cardiac adenylyl cyclase – useful to screen for cpds. which stimulate activity of the cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Regulation; cardiac function; heart; heart failure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
131.:3627
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                  BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cardiac adenylyl cyclase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Fig 2; 34pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                  DNA; 4046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AMCY ) AMERICAN CYANAMID CO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              92EP-0117374.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91US-0793961.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                           TCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1993-168873/21.
                                                                                                                                                                                                                                                                                                                                                                                                                  AAQ42525 standard;
```

```
3
                                                                                                                                                                                 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                      1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1718
                                                                                                                                                             1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1601
                                                                                821
                                                                                            GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTTTTTTTTTACATCGCATACACGCTCC 124
                                                                                                             881
                                                                                                                          TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTGA 184
                                                                                                                                          941
                                                                                                                                                      TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTGGAAGCAGCTCGGTGCCAATG 244
                                                                                                                                                                                                                364
                                                                                                                                                                                                                                             424
                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                   Gaps
                                                                 64
  activity
                                                                                                                                                                                                              ACGIGGIGCIGGGCATCCTGGCGGCAGTCGGGGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                           ATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                     AGATGAAAGAAGACATCAACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                      AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                 CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                              AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                           TGTCAGGGCTGCCGGAGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                   9
cpds. which stimulate the
                                      Length
                                                   Indels
                      843 T; 0 other;
                                    DB 14;
                                                   157;
                                    84.3%; Score 1527.8; 91.0%; Pred. No. 0;
                                                   0; Mismatches
                      .;
G
                      C; 1254
 screen
                      A; 1206
Ç
                                          Best Local Similarity 91.0
Matches 1648; Conservative
useful
                      743
                      Sequence 4046 BP;
gene is
                                    Query Match
cyclase
       the
                                                                                                           822
                                                                                                                                                                    942
                                                                                                                                                                                                                                                                                                                   1242
                                                                2
                                                                              762
                                                                                                                                                      185
                                                                                                                                                                                                                             1062
                                                                                                                                                                                                                                                          1122
                                                                                                                                                                                                                                                                                      1182
                                                                                             65
                                                                                                                          125
                                                                                                                                                                                                               305
                                                                                                                                                                                                                                            365
                                                                                                                                                                                                                                                                        425
                                                                                                                                                                                                                                                                                                    482
                                                                                                                                                                                                                                                                                                                                 542
                                                                                                                                                                                                                                                                                                                                               1302
                                                                                                                                                                                                                                                                                                                                                              602
                                                                                                                                                                                                                                                                                                                                                                                                        1422
                                                                                                                                                                                                                                                                                                                                                                                                                                     1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1542
                                                                                                                                                                                                                                                                                                                                                                                           662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1602
                                                                                                                                                                                                                                                                                                                                                                                                                        722
                                                                                                                                                                                                                                                                                                                                                                                                                                                   782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1659
85558
                                                                å
                                                                             셤
                                                                                           ò
                                                                                                          g
                                                                                                                         ò
                                                                                                                                    g
                                                                                                                                                  δ
                                                                                                                                                                 g
                                                                                                                                                                             ò
                                                                                                                                                                                            q
                                                                                                                                                                                                              ò
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                      δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
```

```
1081
                                                          1838
                                                                             1141
                                                                                                                                       1958
                                                                                                                                                          1261
                                                                                                                                                                            2018
                                                                                                                                                                                                1321
                                                                                                                                                                                                                  2078
                                                                                                                                                                                                                                      1381
                                                                                                                                                                                                                                                                            1441
                                                                                                                                                                                                                                                                                               2198
                                                                                                                                                                                                                                                                                                                  1501
                                                                                                                                                                                                                                                                                                                                      2258
                                                                                                                                                                                                                                                                                                                                                         1561
                                                                                                                                                                                                                                                                                                                                                                             2318
                                                                                                                                                                                                                                                                                                                                                                                                                  2378
                                                                                                                                                                                                                                                                                                                                                                                                                                      1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2498
 1021
                                                                                                                   1201
                                                                                                                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1741
 GCCGTGGTGGCAAGCGCGTACCTCAAGGAGCAGCACATTGAGGACTTTCCTCATCC
           GCACCCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                                                             GTGCCCAAGATGCCCTGAACCCCGAGGATGAGTCGATGAGTTCCTGGGCCGTGCCATCG
                                                                                                                                                                                                          2019 ATGCCCGCAGCATCAGCTACGGAAGGACCATGTGCGCCGCTTCCTGCTCCTTCC
                                                                                                                                                                                                                                               2139 TGGCCTGTGGCTGTTGGCTTCTGGCTTCATCTGCTTTATCCAGCTCCTCGTCTTCTCCCAC
                                      TGGGCGCCAGCCAGAAACGGAAAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC
                                                                            GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                   CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG
                                                                                                                                                                                               ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                                                       AGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                                           1382 TIGCCIGIGCCCIGITGGICITCTGCTICATCIGCTICATCCAGCTICIAATTITCCCAC
                                                                                                                                                                                                                                                                                                                  1442 ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                              GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1502 TGATCTGTGCTGTGTACTCCTGTGCTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC
                                                                                                                                                                                                                                                                                                                                                                  TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAMP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Adenylyl cyclase; type I; type II; recombinant; enzyme; cAMP
cyclic AMP; adenosine monophosphate; screening; stimulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   adenylyl cyclase coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA53923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAA53923,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Λī
                   1719
                                     1022
                                                         1779
                                                                                                1839 (
                                                                                                                                                                                                                                      1322
                                                                                                                                                                                                                                                        2079
 962
                                                                            1082
                                                                                                                                                                                                                                                                                                                                      2199
                                                                                                                                                                                                                                                                                                                                                                           2259
                                                                                                                   1142
                                                                                                                                                         1202
                                                                                                                                                                                                                                                                                                                                                                                               1562
                                                                                                                                                                                                                                                                                                                                                                                                                 2319
                                                                                                                                                                                                                                                                                                                                                                                                                                      1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA53923
ID AAA5
XX AC AAA5
XX DT 03-J
XX C TYPE
XX W AGEN
KW AGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                      QY
Db
              g
                                                    g
                                                                        οy
                                                                                           g
                                                                                                                              g
                                                                                                                                                                                                            q
                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                       QY
Db
ŏ
                                     δ
                                                                                                                  à
                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                 Q.
Db
                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

```
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A recombinant Adenylyl cyclase is described which lacks membrane bound domains. Separation and purification of the recombinant enzyme is much easier compared with wild type enzymes and the recombinant enzyme is more stable than the wild type enzyme which allows easier screening of compounds that stimulate and inhibit Adenylyl cyclase activity. The recombinant adenylyl cyclase activity. The recombinant adenylyl cyclase comprises a chimera of adenylyl cyclase (1 and C_2 domains linked covalently. The domains may be linked by a linker peptide. The recombinant adenylyl cyclase is useful for screening inhibitors and stimulators of adenylyl cyclase activity. Inhibitors of the enzyme are useful for treating cholera, pituitary tumnos, heart failure, ischaemia, endocrine disorders and cell necrosis. Stimulators of adenylyl cyclase are useful for treating pseudohypoparathyroidism and other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel soluble mammalian polypeptide composition comprising adenylyl cyclase activity for screening stimulators and inhibitors of adenylyl cyclase, is activated by Gsalpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCCCATCCGCATGCGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTGA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 ACGIGGIGCIGGCCAICCIGGCGCAGIGCAGICGGGGGGGCGCITICGCAGCAGACCCGC 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79.3%; Score 1437.2; DB 21; Length 4131; ilarity 87.5%; Pred. No. 0; Conservative 0; Mismatches 223; Indels 3;
   tumour; heart failure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4131 BP; 835 A; 1190 C; 1182 G; 924 T; 0 other;
inhibition; treatment; cholera; pituitary tumour; heari
ischaemia; endocrine disorder; cell necrosis;
pseudohypoparathyroidism; endocrine deficiency; human;
                                                                                        Location/Qualifiers
14..3556
/*tag= a
/product= Type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Columns 75-78; 73pp; English.
                                                                                                                                                                                                                                                                   95US-0005498
                                                                                                                                                                                                                                     96US-0726214
                                                                                                                                                                                                                                                                                                  (TEXA ) UNIV TEXAS SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endocrine deficiencies
                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-578539/54.
P-PSDB; AAB02010.
                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 1584; Conserv
                                                                                                                                                                                                                                                                                                                                 Tang
                                                                sapiens
                                                                                                                                                                                                                                    04-OCT-1996;
                                                                                                                                                                                                                                                                   04-OCT-1995;
                                                                                                                                                                         US6107076-A
                                                                                                                                                                                                      22-AUG-2000
                                                                                                                                                                                                                                                                                                                                Gilman AG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              927
                                                                Homo
                                                                                           Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
```

```
1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1381
                                                                                             GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCAGTGAGACTTTGCTCATCC 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1647 GCCGTGGCGGTGAGCGCAACGCGTACCTCAAGGAGCAGTGCATTGAGACCTTCCTCATAC 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGGGAGGATCTCGAGAAGAAGTATTCACGGAAAGTAGACCCTCGTTTCGGAGCCTACG 2066
           1382 TIGCCIGIGCCCIGIIGGICTICIGCIICAICIGCIICAICCAGCIICIAAITIICCCAC 1441
                                                              ATGAGAATCGACAGCAGGAACGGCTGCTGCTGTCGGTGTTGCCCCAGCATGTTGCCATGG 1106
                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                 196
                                                                                   481
                                         424
364
                                                                                                                                                                                                                                                                                                                                                                                                    TGTCAGGGCTGCCGGAGGCCCGGCCCACTGCCCACTGCTGTGGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                 AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                               TGGGCATCCACAGGGGGGGGGGGTGCACTGGCGTTGGCTTGGCTTGGCAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                       842 ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                 GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                                        CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                     ACATGATTGATGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                         ATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGG
                                                                                   AGATGAAAGAAGACATCAACACAAAAAAAAAGAAGAC - - - ATGTTCCACAAGATCTACATAC
                                                                                                                              AGAAGCATGACAATGTCAGCATCCTGTTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                   722
                                                                                                                                                                                                                                                                                                                                                                                                            1527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1262
                    987
                                         365
                                                              1047
                                                                                                                                                 1167
                                                                                                                                                                       542
                                                                                                                                                                                           1227
                                                                                                                                                                                                                602
                                                                                                                                                                                                                                      1287
                                                                                                                                                                                                                                                           662
                                                                                                                                                                                                                                                                                                                                               782
                                                                                                                                                                                                                                                                                                                                                                  1467
                                                                                                                                                                                                                                                                                                                                                                                                                                 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1322
302
                                                                                   425
                                                                                                                             482
                                                                                                                                                                                                                                                                            Ωp
                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                             염
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
              g
                                                          8
                                                                                                  q
                                                                                                                                             g
                                                                                                                                                                                     a
                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                    Οÿ
                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                             οχ
                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΛ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                     Ω
                                                                                 ά
                                                                                                                            δ
                                                                                                                                                                δý
                                                                                                                                                                                                                δý
```

ä

```
The present invention describes a method for examining ischaemic conditions, comprising measuring the expression levels of particular genes (1) in a test sample or determining the expression profile of a gene group in the sample comprising genes selected from (1). The method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         measuring
                                                                                                                                                                                                            2366
             2126
                                                                                                                                                                                                                                                                                                         2486
                                                                                                                                                                                                                                                                                1742 ATTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTC 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Examining the ischemic condition (e.g. occlusive ischemia) by measurin expression levels of particular genes defined in the specification or by determining the expression profile of a gene group comprising these
2127 ACTCCGCCCTGATACTCGGGATTTATGCCGGGATCTTCCTTTTGCTGCTGGTCACCGTGC
                                                                                   1502 TGATCTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC
                                                                                                                                   GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGGCTTG
                                                                                                                                                                                    TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                                                                                                ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mouse; ischaemia; compressive ischaemia; occlusive ischaemia; vasospastic ischaemia; ischaemic condition; ischaemic disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mouse ischaemic condition related cDNA sequence SEQ ID NO:716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ishii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nagata T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UYNI-) UNIV NIHON SCHOOL JURIDICAL PERSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2; Page 1771-1780; 2690pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Takahashi Y,
                                                                                                                                                                                                                                                                                                                                                                                                                   ВР
                                                                                                                                                                                                                                                                                                                                                                                                               ABI99680 standard; cDNA; 5841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-MAY-2000; 2000JP-0145977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-MAY-2001; 2001WO-JP04192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              s,
                                                                                                                                                                                                                                                                                                                              CTGAGGTGTT 1811
                                                                                                                                                                                                                                                                                                                                                    2487 CTGAGTACTT 2496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2002-034733/04
P-PSDB; ABB57257.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Asai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200188188-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ishikawa K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               07-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                        ABI99680;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genes
                                    1442
                                                                                                         2187
                                                                                                                                   1562
                                                                                                                                                         2247
                                                                                                                                                                                 1622
                                                                                                                                                                                                         2307
                                                                                                                                                                                                                                 1682
                                                                                                                                                                                                                                                        2367
                                                                                                                                                                                                                                                                                                                              1802
                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                        ABI99680
                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                    ò
                                                           g
                                                                                                      qq
                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                               δ
                                                                                                                                 δ
                                                                                                                                                    8
                                                                                                                                                                            à
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                              δy
```

```
1086
                                                                                                           condition related sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATGATCGAAGCCATCTCGCTGGTGCGTGAGGTAACAGGTGTGAACGTGAACATGCGTG 1506
           ischaemia, occlusive ischaemia or vasospastic ischaemia) by measuring expression levels of particular genes (AB199202 to AB199912, encoding the protein sequences in ABB57020 to ABB5734) or by determining the expression profile of a gene group comprising these genes. The expression levels or expression profiles produced by these genes are used as an indicator when screening for ischaemic condition-improving drugs or therapeutics for ischaemic diseases. AB199913 and AB199914 represent PCR primers for a mouse ischaemic condition related sequence which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                  846
                                                                                                                                                                                                                                                                                                                                                                       906
                                                                                                                                                                                                                                                                                                                                                                                                  244
                                                                                                                                                                                                                                                                                                                                                                                                                             996
                                                                                                                                                                                                                                                                                                                                                                                                                                                        304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                            727 ATGTGGTCCTGGGCATCCTAGCAGCCGTGCAAGTCGGGGGTGCCCTGGCAGCCAATCCAC 786
                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                       GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTTTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                    64
                                                                                                                                                                                                                                                                                                       TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTCGGGCCTCTCCACCTTGCATTTGA
                                                                                                                                                                                                                                                                                                                                                                                                   TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCAGCGCCAGGCCTTTCAGGAGACCCGCCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                    ATGAGAATCGGCAGCAGGAGCGGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATGAAAGAAGACATCAACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                              DB 24; Length 5841;
                                                                                                                                                                                                         9
                                                                                                                                                   Sequence 5841 BP; 1214 A; 1558 C; 1673 G; 1396 T; 0 other;
                                                                                                                                                                                                        217; Indels
ischaemic condition (e.g.
                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                              Score 1431.8;
                                                                                                                                                                                            ô
                                                                                                                                                                                            Pred. No.
                                                                                                                                                                              79.08;
87.78;
 useful for examining the
                                                                                                                                                                           Query Match
Best Local Similarity 87.7
Matches 1588; Conservative
                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1387
                                                                                                                                                                                                                                                                                         65
                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                                                                                                        245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1507
 ò
                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
```

brain;

human; hAC5; heart disease;

cyclase;

Type V adenylyl cyclase therapy; diagnosis; ds

sapiens NO9901546-A1

HOMO

Human type V adenylyl cyclase coding sequence

(first entry)

25-MAY-1999

AAX00462;

us-09-750-240-3.rng

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                            1261
                                                                                                                                                                  GTGCCCAAGATGCTCTGAACCCTGAAGATGAGGTGGATGAGTTCCTGGGCCGAGCCATCG 1983
                                                                                                                                                                                    1262 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGGTTTTTGCTCACCTTCC 1321
                                                                                                                                                                                            1322 AGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG 1381
                                                                                                                                                                                                                       TIGCCIGIGCCCTGTIGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCAC 1441
                                                                                                                                                                                                                                              TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 1081
                                                                                                                                                                                                                                                                                                                                                                          1742 ATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTC 1801
                                 GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCATCC 1021
                                                         GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGGTTG
                                                                                                                                                                                                                                                                                                                                                1622 IGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
842 ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                      GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCTTCTCCCGGA
                                                                                                                                 CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAGACAACCGGG
                                                                                                                                                           GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                                                                                                                                                  ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                          GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                               CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGAGTACTTC
                                                                                                                                1142
                                                                                                                                             1864
                                                                                                                                                                                                                                        1382
                                                                                                                                                                                                                                                     2104
                                                                                                                                                                                                                                                                                                                                                                                       2404
                                      1624
                                                                1684
                                                                             1022
                                                                                                      1082
                                                                                                                   1804
                                                                                                                                                          1202
                                                                                                                                                                                                 1984
                                                                                                                                                                                                                           2044
                                                                                                                                                                                                                                                                  1442
                                                                                                                                                                                                                                                                                                                      1562
                                                                                                                                                                                                                                                                                                                                   2284
                                                                                                                                                                                                                                                                                                                                                                                                                  2464
                                                                                                                                                                                                                                                                                                                                                                                                                               1802
                                                                                                                                                                                                                                                                                                                                                                                                                                            2524
                         902
                                                   962
                                                              Q
                                                                                      QQ
                                                                                                               Op
                                                                                                                                          QQ
                                                                                                                                                         QΥ
                                                                                                                                                                     Ωp
                                                                                                                                                                                δy
                                                                                                                                                                                              g
                                                                                                                                                                                                          οy
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                Qy
Db
                                                                                                                                                                                                                                                                                        Q.
Db
                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                               QY
                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                 g
δ
           g
                        δ
                                    Db
                                                 ŏ
                                                                            δ
                                                                                                   δy
                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
```

Newly isolated and purified human type V adenylyl cyclase (hAC5) cylypeptide - useful for identifying potential therapeutic agents that modulate hAC5 activity, and for the diagnosis of hAC5-associated diseases and disorders

(CORT-) COR THERAPEUTICS INC

WPI; 1999-106048/09.

Fomlinson JA;

P-PSDB; AAW30600

98WO-US13540. 97US-0886362. 97US-0070901.

01-JUL-1998; 01-JUL-1997; 01-JUL-1997;

14-JAN-1999

```
This sequence encodes the human type V adenylyl cyclase (hAC5) of the invention. hAC5 has a similar putative structure to other adenylyl cyclase isoforms but, like type VI, is distinguishable in that it has a cyclase isoforms but, like type VI, is distinguishable in that it has a larger N-terminus and a relatively shorter C-terminus as it lacks the capture. The hAC5 polypeptides are useful in assays that screen for potential therapeutic agents, which modulate hAC5 activity. These polypeptides are also useful in assays for the disquosis of diseases and disorders. Agonists of hAC5 are useful control agents in such assays, and chey may have useful effects in vivo for treating disease. Antibodies cuseful in immunoassays for hAC5. (Ant)agonists are particularly useful in the heart and brain), and in diseases, which are alleviated by modulating hAC5 activity. The oligonucleotides are useful in methods that inhibit or regulate hAC5 expression in vivo and in vitro. The cloning of the human isotype of AC5 enables the development of tissue-specific and selective pharmacological agents for use in treating particular human diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1046 ATGCGCTCATCGCCGTGGTGCTGGCCGTCCAGGTGGTGGGCCTGCTGCTGCCGCAGCCAC 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTGGGTGCCAATG 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 4523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      525; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 4523 BP; 840 A; 1419 C; 1428 G; 836 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 895; DB 20;
Pred. No. 5.7e-229;
0; Mismatches 525;
Claim 3; Fig 1a-h; 40pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 09.0
Matches 1277; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Óλ
```

AAX00462 standard; DNA; 4523 BP

RESULT 10
AAX00462
ID AAX00
XX

```
TGCCTGTGCCCTGTTGGTCTTCTGCTTCACTGCTTCACCAGCTTC 1429
              CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGC 1489
                                                                                                                                                                                                        CAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTT 1609
                                                                                                                                                                                                                                                                                                                                                               GAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCT 1369
                                                                                                                                                      GATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGC 1549
                                                                                                                                                                      GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCA 1669
                                                                                                                                                                                                                                                                         yclase and corresp. DNA - having specified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                yclase; effector enzyme; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                 CTTTCCTGAGGTGTTC 1812
||| || || || || CTTCCCCGAGTACTTC 2868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ocation/Qualifiers
8..3702
tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA; 4356 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      yclase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YANAMID CO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      W-0105242.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S-0899068.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              t entry)
```

```
IGCTIGIGITIACTICIGCCATIGCCAACAIGTICACCIGIAACCACACCCCCATACGGA 1675
                                                                 CCGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTC 1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2441 CCCTGGTGTTCCTGTCGGCTTTCGTCAACATGTTCATGTGTAACTCCGAGGACCTGTTGG 2500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTCGGCGGCCAACCTCAGCCTGGGGCAGGAGGGCTTCTGCGGGCACGCCCTGGCCCA 2620
            GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC 1021
                                                     TGGGCGCCAGCCAGAAACGGAAAAGAGAGAAAGGCATGCTGGCCAAGCTGCAGCGGGACTC 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACV; therapy; diagnostic; cardiac function; cyclic AMP; cAMP; heart;
                                                                                                                                                                                                                                                                                                                                                                  GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                         2021 ACAAGAACGCCCAGGAAAGTGCGAACCCTGAGGATGAAGTGGATGAATTTCTGGGCCGCG
                                                                                                                                                                                                                                                                   CCTTCCAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAG
                                                                                                                                                                                                                                                                                                             CCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTT
                                                                                                                                                                                                                                                                                                                                                      TCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCA
                       1961 ACCTAGGAGGCAACCAGGTGTCCAAGGAGATGAAGCGCATGGGCTTCGAAGACCCCAAGG
                                                                                                                                                                                                                         CCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                            TGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATTTTCCGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGCCTGGCGGACGACACATCAGCACCAGCCGGGTCAACGCGTGCCACGTGGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -GCAGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCA
                                                                                                                                       CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cardiac adenylyl cyclase type V gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGCAGCTTTCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA; 4356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTGCAACTTCCCCGAGTACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAQ37543 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAQ37543;
                              1781
                                                                                                                  1901
                                                                                                                                                                                                                                                                                                            1376
            962
                                                   1022
                                                                       1841
                                                                                             1082
                                                                                                                                       1142
                                                                                                                                                                                1202
                                                                                                                                                                                                                         1256
                                                                                                                                                                                                                                              2081
                                                                                                                                                                                                                                                                   1316
                                                                                                                                                                                                                                                                                        2141
                                                                                                                                                                                                                                                                                                                                 2201
                                                                                                                                                                                                                                                                                                                                                      1436
                                                                                                                                                                                                                                                                                                                                                                           2261
                                                                                                                                                                                                                                                                                                                                                                                               1496
                                                                                                                                                                                                                                                                                                                                                                                                                   2321
                                                                                                                                                                                                                                                                                                                                                                                                                                        1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                              q
                                                                                                                                                      q
                                                                                                                                                                                              Q
                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
            ò
                                                  ò
                                                                   g
                                                                                        δ
                                                                                                                                      ò
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                           à
                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                  3
                                                                                                                                                                                                                                                                                                                                                                        GGGAGAACCAGCAACAGGAGCGGCTCCTGCTGTCCTGCCCGACACGTTGCCATGG 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1600
                                                                                                                                                                                                    304
                                                                                                                  364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                               GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                         TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTTGGGCCTTCCCACCTTGCATTTGA 184
           effector enzyme cardiac adenylyl
                                                                                    Gaps
                                                                                                       64
                                                                                                                                                                                                                                                                                                                   CCATCGCCCTGCGCCACGACGCCCAGGACCGGTTCCTGCTCAAGCAGCTCGTCTCCAATG
                                                                                                                                                                                                                                                                                         TCCTCATTTTCTCCTGCACCAACATCGTGGGTGTCTGTACCCACTACCCGGCTGACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGTGGTGCTGGCGATCCTGGCGGCGAGTGCAGGTCGGGGGGGCGCTTTCGCAGAGCCCGC
                                                                                                                                                                                                                                                                            ATGAGAATCGGCAGCAGCAGCGGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                        AGATGAAAGAAGACATCAACACAAAAAAAAGAAGA----CATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGTCTGGTCTAATGACGTCACGCTGGCCAACCATATGGAAGCTGGAGGCAAGGCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                            Length 4356;
                                                                                  Indels
                                       BP; 836 A; 1372 C; 1373 G; 775 T; 0 other;
                                                             DB 16;
                                                          Score 884.6; DB 16;
Pred. No. 3.4e-226;
0; Mismatches 549;
           novel
         the
                                                            48.8%;
         encodes AAR78519,
                                                                                 Conservative
                                                                       Similarity
                                       Sequence 4356
                                                                                 Matches 1259;
        AAQ95540
                                                             Query Match
                     cyclase
                                                                                                                                                                                                                                                      1001
                                                                                                      Ŋ
                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                1061
                                                                                                                                                                                                                                                                                                                                          1121
                                                                                                                                                                                                                                                                                                                                                                                  1181
                                                                                                                                                                                                                                                                                                                                                                                                                            1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1721
                                                                                                                                               65
                                                                                                                                                                   881
                                                                                                                                                                                        125
                                                                                                                                                                                                             941
                                                                                                                                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                     305
                                                                                                                                                                                                                                                                                                                                                                                                       425
                                                                                                                                                                                                                                                                                                                                                                                                                                                 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1601
                                                                                                                                                                                                                                                                                                                                                               365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 902
XUUXX
                                                                                                                        QQ
                                                                                                                                                                qq
                                                                                                                                                                                                                                                    Op
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                      ò
                                                                                                                                              ò
                                                                                                                                                                                       ò
                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                             οŽ
                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                 ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                            οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

ò g ŏ 요 δ

1315

1435

1495

```
425
                                                                                                                                  542
                                                                                                                                                               1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2261
                                                                           482
                                                                                                                                                                                                                                                       662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1256
                                           g
                                                                          ŏ
                                                                                                   a
                                                                                                                                δy
                                                                                                                                                            g
                                                                                                                                                                                             ò
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGAGAACCAGCAAGAAGGGGCTCCTGCTGTCTGCTGCCCGACACGTTGCCATGG 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1001 CCATCGCCCTGCCGCCCAACGCCCAAGGACCGGTTCCTGCTCAAGCAGCTCGTCTCCAATG 1060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCAGAGACAGGCCTTCCAAGAGACCCGGGAGTGCATCCAGGCACGGCTCCACTCGCAAC 1180
                                                                                                                                                                                                                                                                                                                                                                                                           Left ventricular tissue of canine heart was used as a source of mRNA. A cDNA library was prepd. in lambda gt10 phage. A 970 bp Aat-HincII fragment from type I adenyly1 cyclase cDNA was used as probe. The clones isolated were used to obtain CDNA encoding CACV. This probe may also be used to screen a human cardiac cDNA library to obtain the CDNA encoding human CACV. CACV, its analogues and antibodies are useful in therapy or diagnostic assays, e.g. in modifying and determining cardiac function. A decrease in CACV content of the heart contributes to impaired cAMP prodn. and in heart failure. The CACV can also be used to screen for cpds. which stimulate or inhibit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCCCATCCGCATGCGGGTTGCTCAGCGGCCTGGGCTCTCCACCTTGCATTGA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185 TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                        solated nucleic acid mol. encoding Cardiac adenylyl cyclase type - useful for determining and modifying cardiac function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGAGAATCGGCAGCAGCAGCGGCTGCTGCTCGGTATTGCCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.8%; Score 883.4; DB 14; Length 4356; llarity 68.9%; Pred. No. 7.2e-226; Conservative 0; Mismatches 551; Indels 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4356 BP; 837 A; 1367 C; 1377 G; 775 T; 0 other;
                                                   Location/Qualifiers
148..3702
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page 15-27; 38pp; English
                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the activity of the cyclase,
                                                                                                                                                                                                         91US-0751460
                                                                                                                                                                           92EP-0114637
                                                                                                                                                                                                                                      (AMCY ) AMERICAN CYANAMID
                                                                                                                                                                                                                                                                    Konski AF;
                                                                                                                                                                                                                                                                                                1993-068688/09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
Matches 1243; Conserv
                           Canis familiaris
                                                                                                                                                                                                                                                                                                              P-PSDB; AAR32882
                                                                                                                                                                                                         29-AUG-1991;
                                                                                                                                                                           27-AUG-1992;
                                                                                                                                                                                                                                                                 Ishikawa Y,
                                                                                                                                              03-MAR-1993
                                                                                                                  EP529622-A.
failure;
                                                                                                                                                                                                                                                                                                                                          Isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            881 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   365
                                                         Key
```

P Q

1481 TCTCTGGGCTGCCTGAAGCGAGGCCGACCACGCCCACTGCTGCTGGAGATGGGCATGG 1540 GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCATCC 1021 1901 GAACCAACTCCATTGGGCACAACCCGCCCACTGGGGGGCCGAACGTCCCTTCTACAACC 1960 GCA-----CCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTG 1255 CCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCA 1315 CCTTCCAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAG 1375 CCIACGITGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTT 1435 TCCCACACCTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCA 1495 CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGGG 1201 601 661 721 781 841 901 961 AGATGAAAGAAGACATCAACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC 481 CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA 782 TGGGCATCCACAGCGGCGCGCGTGCACTGCGCGTTGGCTTGCGGAAATGGCAGTTCG GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG 842 ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA 1961 ACCTAGGAGGCAACCAGGTGTCCAAGGAGATGAAGCGCATGGGCTTCGAAGACCCCAAGG CCTACGTGGCATGTGCCTCGCTTGTCTTCCTTCATCTGCTTTGTCCAGATCACCATCG **AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT** ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAAAATGTGCGCG

4,

```
481
                                                                                                                                                                                                             125
                                                                                                                                                                                                                                                                               245
                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                305
                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                  482
                                                                                                                                                                                                                                                                                                                                                                                                                                                   542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                                                 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    662
00000000000x8
                                                                                                                                            δ
                                                                                                                                                           g
                                                                                                                                                                             ŏ
                                                                                                                                                                                          Q
                                                                                                                                                                                                             δy
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                 TGCTTGTGTTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACGCCCCATACGGA 1675
CCGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTC 1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel soluble mammalian polypeptide composition comprising adenylyl cyclase activity for screening stimulators and inhibitors of adenylyl
                                          TGGTATTTGTGTCTCGTGATCTATTCCTGCGTGAAGCTCTTCCCGGGCCCCGCTCCAGAGCC
                               TGTCCCGCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCC
                                                                                                                                   AGCTCAATTACTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A recombinant Adenylyl cyclase is described which lacks membrane bound domains. Separation and purification of the recombinant enzyme is much easier compared with wild type enzymes and the recombinant enzyme is more stable than the wild type enzyme which
                                                                                                  Adenylyl cyclase; type I; type II; recombinant; enzyme; cAMP; cyclic AMF; adenosine monophosphate; screening; stimulation; inhibition; treatment; cholera; pituitary tumour; heart failure; ischaemia; endocrine disorder; cell necrosis; pseudohypoparathyroidism; endocrine deficiency; human; ss.
                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
3..3329
/*tag= a
/product= Type V adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Columns 65-70; 73pp; English.
                                                                                                                                                                                                                                                                               Type V adenylyl cyclase coding sequence.
                                                                                                                                                                                                                              BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gsalpha
                                                                                                                                                                                                                              CDNA; 3924
                                                                                                                                                                                                                                                                                                                                                                                                                                                         95US-0005498
                                                                                                                                                                                                                                                                                                                                                                                                                                         96US-0726214
                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TEXA ) UNIV TEXAS SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cyclase, is activated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000-578539/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                             AAA53922 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAB02009.
                                                                                                                                                                   GCT 1798
                                                                                                                                                                                    GCT 2623
                                                                                                                                                                                                                                                                                                                                                sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-OCT-1995;
                                                                                                                                                                                                                                                              03-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                        US6107076-A
                                                                                                                                                                                                                                                                                                                                                                                                                         22-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AG,
                                                                                                                                                                                                                                              AAA53922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gilman
               2321
                                                                 1616
                                                                                                 1676
                                                                                                                  2501
                                                                                                                                   1736
                                                                                                                                                  2561
1496
                                                2381
                                                                                                                                                                   1796
                                1556
                                                                                                                                                                                    2621
                                                                                                                                                                                                             RESULT 13
                                                                                                                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                     8
                                                                                                                                                                                 g
à
              q
                                ă
                                              g
                                                            à
                                                                                                 à
                                                                                                             q
                                                                                                                              δ
                                                                                                                                                셤
                                                                                                                                                                  à
```

```
1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                allows easier screening of compounds that stimulate and inhibit Adenylyl cyclase activity. The recombinant adenylyl cyclase comprises a chimera of adenylyl cyclase (21 and (22 domains linked covalently. The domains may be linked by a linker peptide. The recombinant adenylyl cyclase is useful for screening inhibitors and stimulators of adenylyl cyclase activity. Inhibitors of the enzyme are useful for treating cholera, pitultary tumors, heart failure, ischaemia, endocrine disorders and cell necrosis. Stimulators of adenylyl cyclase are useful for treating pseudohypoparathyroidism and other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                    421 ATGCGCTCATTGCAGTGGTGCTGGCCGTCCAGGTAGTGGGCCTGTTGCTGCCACAGCCAC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCCCATCGCATGCGGGCTGCCGTCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGA 184
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                        64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841 AGATGAAAGCAGACATCAACGCCAAACAGGAGGATATGATGTTCCACACAAGATTTACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTGTATACATCGCATACACGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                185 TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         365 ATGAGAATCGGCAGCAGCAGCGCTGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATGAAAGAAGACATCAACACAAAAAAAAGAAGA----CATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCAGGGCTGCCGGAGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                                                           27;
                                                                                                                                                                                                                                                                                                    Length 3924;
                                                                                                                                                                                                                                                                                               Score 858.2; DB 21; Length
Pred. No. 3.8e-219;
0; Mismatches 548; Indels
                                                                                                                                                                                                                                                     Sequence 3924 BP; 860 A; 1103 C; 1110 G; 851 T; 0 other;
                                                                                                                                                                                                                                                                                                 47.4%;
                                                                                                                                                                                                                                                                                                                      Best Local Similarity 68.6
Matches 1254; Conservative
                                                                                                                                                                                                             endocrine deficiencies
                                                                                                                                                                                                                                                                                                    Query Match
```

Human; adenylyl and guanylyl cyclase; ADGUC-2; cardiovascular disorder; analyna peetoris; mycacardial infarction; vision disorder; keratitis; iritis; cataract; neurological disorder; epilepsy; Alzheimer's disease; pick's disease; stroke; mental disorder; mood and anxiety disorder; reproductive disorder; infartility; endometriosis; impotence; asthma: smooth muscle disorder; migraine; bacterial infection; gene therapy; transgenic animal; vaccine; enzyme; ss.

/*tag= a /product= "Human ADGUC-2 protein"

/*tag=

WO200202757-A2

10-JAN-2002

Location/Qualifiers 1..2514

Homo sapiens

Human adenylyl and guanylyl cyclase (ADGUC)-2 cDNA.

(first entry)

22-APR-2002

AAD28058;

```
1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1490 TAATCACCGTGCTGATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGC 1549
                                                                                                                                                                                   TGGGCGCCAGCCAGAAACGGAAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 1081
                                                                                                                                                                                                                1441 TGCGCTGTACCCAGAAGCGGAAAGAAGAAGGCCATGATCGCCAAGATGAACCGCCAGA 1500
                                                                                                                                                                                                                                                                                                                                                                                                     ---AGGACAAGAATGCCCAGGAAAGTGCCAACCCTGAGGATGAAGTGGACGAGTTTCTGG 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTT 1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1370 TCGGAGCCTACGTTGCCTGTTGGTTGTTCTGCTTCATCTGCTTCATCCAGCTTC 1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1855 CCATTGTGCCCCACTCCTGTTCATGCTGAGCTTCTACCTGTCGTGTTTCCTGCTACTGG 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1915 CCTIGGTGGTGTTATATCTGTGATCTACGCCTGTGTGAAGCTCTTCCCTACTCCCCTGC 1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1975 AGACACTCTCCAGGAAGATAGTGCGATCCAAGAAGAACAGCACCCTGGTCGGGGTGTTCA 2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1730 IGCAGCAG-----CTCAATTACTCTCGGGCCTGGATGCTCCCCTGTGTGAGGGCACCA 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                 GTCGAGCCATCGATGCCAGGAGTATTGACAGACTGCGATCCGAACACGTCCGAAAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1430 TAATITICCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2095 IGGIGGGTIGCCIGGCAGAGGAGCACATCACGGIGAACCAGGIGAACGCATGICATG
842 ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                      GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC
                                                                                                                                                                                                                                                                                                           -----CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGCCATTGATGATTCCAGCA
                                                                                                                                                                                                                                                                                                                                                                      AAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGAGTTCCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1310 TGCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1795 TresrectArerecererecerecerrerrecererecererearca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1550 AACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTT
                                                           GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                             1082 GGGCCAACTCCATGGAAGGGCTGATGCCGGATGGGTTCCTGATCGTGCCTTCTCC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1610 CCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1784 TGCCCACCTGCAGCTTTCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2215 AGTCCAACTGCAACTTCCCAGAGTACTTC
                                                                                         1321
                                                                                                                                                                                 1022
                                                                                                                                                                                                                                                                                                           1138
                                                                                                                                                                                                                                                                                                                                                                      1190
                                                                                                                                                                                                                                                                                                                                                                                                     1618
                                                                                                                                                                                                                                                                                                                                                                                                                                   1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1735
                                                           902
                                                                                                                        962
                            셤
                                                                                    q
                                                                                                                                                 ΩQ
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
ò
                                                           ò
                                                                                                                      δ
                                                                                                                                                                                 δý
                                                                                                                                                                                                                                           δŻ
                                                                                                                                                                                                                                                                                                        ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
The invention relates to human adenylyl and guanylyl cyclases (ADGUC) preferably ADGUC1-ADGUC5 and nucleic acid molecules encoding such polypeptides. ADGUC sequences are useful in the diagnosis, prevention and treatment of cardiovascular disorders (e.g. angina pectoris, myocardial infarction, ischemic heart disease, hypertension and atherestics, iritis, cataract), neurological disorders (e.g. epilepsy, Alzheimer's disease, pick's disease, Huntington's disease, dementia, Parkinson's disease, Dick's disease, Huntington's disease, dementia, Parkinson's disease, Creutzfeldt-Jakob disease, stroke, schizophrenia, mental disorders including mood and anxiety and prion diseases including kuru), reproductive disorders (e.g. infertility, endometriosis, impotence, uterine fibroid and gynaecomastia), smooth muscle disorders (e.g. arrhythmias, asthma and migraine) and bacterial infections.

Compared to germline gene therapy, ADGUC polynucleotides are useful in somatic or germline gene therapy, ADGUC polynucleotides are useful condetting differences in the chromosomal location due to translocation, inversion, etc. among normal, carrier or affected individuals. ADGUC polypeptides are useful in a number of drug screening individuals.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel human adenylyl and guanylyl cyclases and polynucleotides encoding
the cyclases, useful for treating, diagnosing or preventing
cardiovascular, neurological, vision, reproduction and smooth muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   techniques and in vaccines. The present sequence is human ADGUC-2 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ب
ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yue H, Yang
Elliott VS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lee EA, Yu
Tang YT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 567 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lu DAM,
Walia NK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3137 BP; 553 A; 973 C; 1044 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 5; Page 112-113; 116pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ľ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ding L,
Yao MG,
                                                                                                                                                                                                                                                                                                                                                                                                                        2000us-223545P.
2000us-229876P.
2000us-234838P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (INCY-) INCYTE GENOMICS INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-236483P
                                                                                                                                                                                                                                                                                                                                                                               2001WO-US20491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tribouley C,
Thornton M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-154740/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAE17130
                                                                                                                                                                                                                                                                                                                                                                                                                         04-AUG-2000;
31-AUG-2000;
22-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                               26-JUN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                             29-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AR,
MR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Baughn
Lu Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gandhi
```

BP.

standard; cDNA; 3137

AAD28058

Ω×

RESULT 14 AAD28058

a

ò

Dp

Óγ g ò

δ

g

9 Q

QY Db

q

δ

QQ

δý

οy

Q

Q

ŏ

g

Q

ò

g

à

a ŏ Db ŏ g

δ

q Q

δ

δy

```
detection reagent for detecting 1000 or more for elucidating cell signalling and cell-cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention
                                                                                 ------CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCA 1189
                                                                                                                                                                                                         TGCTCACCTTCCAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCT 1369
                                                                                                                                                                                                                                                                                                  TCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTC 1429
                                                                                                                                                                                                                                                                                                                TGCGCTGCACCCAGAAGCGGAAAGAAGAAGGCCATGATCGCCAAGATGAACCGCCAGA 2143
                                                                                               AAGACAACGGGGCACCCAAGATGCCCTGAACCTGAGGATGAGGTGGATGAGTTCCTGA
                                                                                                                                                                ---AGGACAAGAACGCCCAGGAGAGTGCGAACCCTGAGGATGAAGTGGATGAGTTTCTGG
                                                                                                                                                                                           GCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTT
                                                                                                                                                                                                                                                             Drosophila melanogaster expressed polynucleotide SEQ ID NO 16985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          developmental biology; cell signalling; insecticide;
                             GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NO 16985; 21pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                  BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABL07501 standard; cDNA; 4827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-MAR-2001; 2001WO-US09231.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-191637P.
2000US-0614150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated nucleic acid
genes from Drosophila and
interactions -
                                                                                                                                                                                                                                                                                                                                                     1430 TAATTTTCCCACACT 1444
                                                                                                                                                                                                                                                                                                                                                                              2498 ccarcerececcaer 2512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ľį
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pharmaceutical; gene; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Venter JC, Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-656860/75.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; ABB63398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (PEKE ) PE CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABL07501;
  2084
                                                                                                                                                                2261
                                                                                                                                                                                                                                              1310
                                                                                                                                                                                                                                                                                                                            2438
                            1082
                                                       2144
                                                                                 1138
                                                                                                                                      1190
                                                                                                                                                                                                                   2318
                                                                                                                                                                                                                                                                       2378
                                                                                                                                                                                                                                                                                                  1370
                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                     ABL07501
                                                  g
                                                                                                     g
                                                                                                                                                           g
                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                ŏ
                                                                                                                                 οy
                                                                                                                                                                                        ò
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                          δ
                ä
                                                        CCATCGCCCTCCCACCACCCCAGGACCAGTTCCTGCTGAAGCAGCTTGTCTCTCAATG 1303
                                                                                                                                                                                                                                                                         CCCAGAGACAGGCTTTCCAGGAGACCCGAGAGTGCATCCAGGCGCGGGCTCCACTCGCAGC 1423
                                                                                                                                                                                                                                                                                                                                                                                GGGAGAACCAGCAGCAGCAACGCTCCTGCTGTCCTTCCCCGTCATGTTGCCATGT 1483
                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCATCC 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 1081
                                                                                                                                                                                                      TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG 244
                                                                                                                                                                                                                                                                                                                                                                  424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                         TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGGTGT 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG 961
                                                                                             GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                 TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTGA 184
                Gaps
                                          64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                             CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                       AGATGAAAGAAGACATCAACACAAAAAAAGAAGA----CATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG
                                       ACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                365 ATGAGAATCGGCAGCAGCAGCGGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGCATCCACAGCGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
               21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
ed. No. 2.4e-203;
Mismatches 365;
  Pred.
               ;
0
73.5%;
              Conservative
Local Similarity
 Best Local Sim:
Matches 1069;
                                                                                                                                                                                                                                1244
                                                                                                                                                                                                                                                                                   1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          482
                                        S
                                                                                                                       1124
                                                                                                                                                  125
                                                                                                                                                                            1184
                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                       1364
                                                                                                                                                                                                                                                                                                                                                                                           1424
                                                                                                                                                                                                                                                                                                                                                                                                                      425
                                                                                                                                                                                                                                                                                                                                                                                                                                               1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2024
                                                                                           65
                                                                                                                                                                                                                                                           245
                                                                                                                                                                                                                                                                                                             305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1022
```

```
4;
                                              WIPO
                                                                                                                                                                                                                                                              1366
                                                                                                                                                          1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1846
                                                                                                                                                                                                         409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   646
                                                                                                                                                                                           GCAGCCCCTCTGCGGGCCTCTGGTGCCTTTGTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             526
                                                                                                                                                 64
                                The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 expressed DNA
                                                                                                                                                ACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                             TGCCCCTTCGCCTGCGGGAGGCTCTGATCGGCGGAATCCTTCTGAGCGTCGTCCATCTGT
                                                                                                                                                                                                                                                                                  CCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGC
                                                                                                                                                                                                                                                                                                                                           ATTGCTACTACTGCGTCTCCGGACTCCCGGACCCCGTCCGGATCACGCCCATTGTGCCG
                                                                                                                                                                                                                                       TCCCCATCCGCATGCGGGCTGC-------CGTCCTCAGCGGCCTGGGCCTCT
                                                                                                                                                                                                                                                                                                                               AGCTCGGTGCCAATGTGCTGCTGCTCCTCTGCACCAACGTCATTAGCATCTGCACACCT
                                                                                                                                                                                                                                                                                                                                                                         ATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                   TCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAAGAICTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTGCACTGCGGGCGTCCTTGGCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAATGGCAGTTCGATGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAG
                                                                                                      4827;
                                                                                                   Query Match
24.6%; Score 445.8; DB 23; Length
Best Local Similarity 57.7%; Pred. No. 1.2e-108;
Matches 913; Conservative 0; Mismatches 607; Indels
                                                                             Sequence 4827 BP; 1115 A; 1377 C; 1340 G; 995 T; 0 other;
discloses genomic DNA sequences (ABL16176-ABL30511), exsequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-ABB72072).
                                                        at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                'n
                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                            1307
                                                                                                                                                                                                                                                                                  170
                                                                                                                                                                                                                                                                                                       1367
                                                                                                                                                                                                                                                                                                                                                    1427
                                                                                                                                                                                           65
                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 827
 8888888
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                   g
                                                                                                                                                                                          ò
                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                        ογ
                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
```

```
1006
                                                                                                                                                                                                                                                                                                                                                                    1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1486
                                                                                                                       AGACTITCCICATCCIGGCGCCCAGCCAGAACGGAAAGGAGAAAGGCAIGCTGGCCA 1066
                                                                                                                                                                                   AGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATC 1126
                                                                                                                                                                                                                                            1127 GTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCA 1186
                                                                                                                                                                                                                                                                                                                                       2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCC 1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2701
946
               ACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTG
                                                                           1427 ITCTAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2642 regerrecregrarreregregeargreacaaaareaacrreagerecearegaea
GAAGCCGGCCTGGCCGCATCCACATCAGCGCCAACACTGCAGTACCTGAACGGGGACT
                                                                                                                                                                                                      2462 TGCTCTCTGCTTCAAGGATAACGTTCTGGAGAGGAAGTACGCCAGCGAACCAGGAACCAGCCA
                                                                                                                                                                                                                                                                                                          1187 GCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCC
                                                                                                                                                                                                                                                                                                                                                                    TGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                 2402 TGATGCGGGCCATCGATGCCCGAAGCATCGATCATTTGAGGGCCGAGCACTGCCAGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTGCTCACCTTCCAGAGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1367 GCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2582 TGGTGGTCTTCCAGAGCTCCCTGCTGACTCTGGCCTTGTCCACTGGCGCTCTGTTGCTGC
                                                                                                                                                    2207 AAACGTATCTAATTGTGCCAGGCGATATATATAGGCCACACAAAAAGTCCA-----
                                                                                                                                                                                                                                                                 Search completed: February 28, 2003, 23:39:05
Job time : 301.906 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCAACGTCTGTCCCGCAGCATT 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAACGCTTCTCATTGCGCATT 2724
                            2087
                                                           947
                                                                                                                                                                                                                                                                            2315
                                                                                                                                                                                                                                                                                                                                                                    1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1547
                                                                                                                      1007
                                                                                                                                                                                   1067
                                                                                                                                                                                                                                                                                                                                       2357
                                                                                                                                                                                                                                                                                                                                                                                                                               1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1487
                       g
                                                                                       g
                                                                                                                                               QQ
                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                 Q
Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                         οy
                                                                                                                   Ω
                                                                                                                                                                               δ
                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                         δý
                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                              δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

Sequence 1 Sequence 1 Sequence 2 Sequence

Sequence 173, App Sequence 181, Appl Sequence 191, Appl Sequence 19, Appl Sequence 11, Appl Sequence 11, Appl Sequence 1358, Ap Sequence 2292, Appl Sequence 6, Appli Sequence 14488, Appli

```
APPLICANT: Industry, u. A. APPLICANT: Insel, P. A. APPLICANT: Ping, P. A. APPLICANT: Ping, P. A. APPLICANT: Ping, P. A. APPLICANT: Post, S. R. APPLICANT: Gao, M. TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART FITLE OF INVENTION: FAILURE FILE REFERENCE: 220002056723 CURRENT APPLICATION NUMBER: US/09/750,240 CURRENT APPLICATION NUMBER: US/09/72,667 PRIOR APPLICATION NUMBER: US/09/42,667 PRIOR FILING DATE: 1999-12-27 PRIOR PELING DATE: 1999-10-16 PRIOR PELING DATE: 1999-0-16 PRIOR APPLICATION NUMBER: US/09/05 PRIOR APPLICATION NUMBER: US/09/05 PRIOR APPLICATION NUMBER: US/09/05 PRIOR APPLICATION NUMBER: US/09/05 PRIOR PELING DATE: 1997-06-16 PRIOR FILING DATE: 1997-06-16 PRIOR FILING DATE: 1997-06-16 PRIOR FILING DATE: 1996-09-05 NUMBER OF SEQ ID NOS: 13
                    ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/09750240 Patent No. US20020103147A1 GENERAL INFORMATION:
 APPLICANT: Hammon, H. K. APPLICANT: Insel, P. A.
US-09-750-240-3
March 1, 2003, 02:24:48 ; Search time 74.3958 Seconds (without alignments) 15188.998 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                        1 gttaacgtggtgctgggcat......gcagctttcctgaggtgttc 1812
                                                                                                                                                                                                                                                                                                                                                                                       . (1912.) Prodata/2/pubpna/V1806_NBW_PUB.seq:*
(1912.6/ptodata/2/pubpna/V1806_NBW_PUB.seq:*
(1912.6/ptodata/2/pubpna/V1806_PUBCOMB.seq:*
(1912.6/ptodata/2/pubpna/V1808_NBW_PUB.seq:*
(1912.6/ptodata/2/pubpna/V1808_NBW_PUB.seq:*
(1912.6/ptodata/2/pubpna/V1808_NBW_PUB.seq:*
(1912.6/ptodata/2/pubpna/V1809_NBW_PUB.seq:*
(1912.6/ptodata/2/pubpna/V1809_PUBCOMB.seq:*
(1912.6/ptodata/2/pubpna/V1809_PUBCOMB.seq:*
(1912.6/ptodata/2/pubpna/V1810_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*/cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
           GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                   460893 seqs, 311809382 residues
                                                                                                                                                                                                                                                                                                                                                         Published_Applications_NA:*
                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                          - nucleic search, using sw model
                                                                                                                                                                               IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                   seq length: 0
seq length: 200000000
                                                                                                                               US-09-750-240-3
1812
                                                                                                                                           Perfect score:
                                                                                                                                                                               Scoring table:
                                                          OM nucleic
                                                                                                                                                                                                                                                                   Minimum DB
Maximum DB
```

Sedneuce:

ö

Searched:

Database

61 CCGCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACG 120 0; Gaps 1 GTTAACGTGCTGCTGCTGCTGCCGCCACCTCGCCGCGCGCTCTTCGCAGAC 60 Length 1812; DB 10; ; Score 1812; D ; Pred. No. 0; 0; Mismatches 100.0%; 100.0%; Query Match 100. Best Local Similarity 100. Matches 1812; Conservative ; TYPE: DNA ; ORGANISM: Homo sapiens US-09-750-240-3 LENGTH: 1812 ò 셤 δ

Sequence i, Appli Sequence 1, Appli Sequence 98, Appl Sequence 182, Appl Sequence 71, Appl Sequence 1351, Ap Sequence 1351, Ap Sequence 123, Appl Sequence 123, Appl Sequence 123, Appl Sequence 123, Appl

0 US-09-750-240-12 0 US-09-750-240-12 0 US-09-750-240-12 0 US-09-925-297-352 0 US-09-925-297-352 0 US-09-751-100B-1 2 US-10-121-911-2 0 US-09-751-100B-98 0 US-09-751-100B-98 0 US-09-764-868-182 0 US-09-764-868-1351 0 US-09-764-868-1353 0 US-09-764-868-1353

10 10 10 10 10 10 10

11881 11881 11881 1259 1259

4473 4985 5515 330 330 330

97.3 117.6 117.6 117.6 111.6 111.5 6.9

1812 1808.4 1763.4 1763.4 1657.8 319.9 209.8 209.8 200.8 201.4 124.4 124.4 124.4 79.2 79.2 79.2 79.2

4942 3582 4523 2601 3518

Sequence 352, App Sequence 2, Appli

Appli

Sequence 10, Requence 1, Apply Sequence 12, Requence 12, Requence 1, Apply Sequence 1, Apply Sequence

SEQ ID NO 3

Appl

Sequence 3, Appl

Description

SUMMARIES

DB

Query Match Length

Score

Result Š. Sequence 5

US-09-750-240-3 US-09-750-240-5 US-09-750-240-10

ö

CACTGC
CCGGGGGCCGGCCACCAGGGCCACTGCGGGGACTGTGGGGGACTGTGGGGGCCCGGGCCGGCC

```
1440
                                                               1260
                                                                                               1320
                                                                                                                                                                                                                                                         1440
                                                                                                                                                                                                                                                                                          1500
                                                                                                                                                                                                                                                                                                                                                                                    1560
                                                                                                                                                                                                                                                                                                                                                                                                                  1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1680
1141 ACCAAGGACTCCAAGGCCTTCCGCCAGATGGCCATTGATGATTCCAGCAAAGACAACGG 1200
                                                                                                              1501 CTGATCTGTGCTGTGTATCTCCTGTGGTTCTCTGTTCCCTAAGGCCCCTGCAACGTCTGTCC 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1621 GTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGT 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1741 AATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1381 GTTGCCTGTGCCCTGTTGTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCA
                                                                                                                                                                                                                                                                                                                                                                     1501 CTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1201 GGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATC
                                                  1261 GATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTC
                                                                                                                                                                                                                           GTTGCCTGTGCCCTGTTGGTCTTCTGCTTCTGCTTCATCCAGCTTCTAATTTTCCCA
                                                                                                                                                                                                                                                                                        1441 CACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-750-140-5

Sequence 5, Application US/09750240

Patent No. US20020103147A1

GENERAL INFORMATION:

APPLICANT: Hammon, H. K.

APPLICANT: Ping, P.

APPLICANT: Gao, M.

TILLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HERRT TILLE OF INVENTION: FAILURE

FILE REFERENCE: 220002056723

CURRENT FILING DATE: 2001-10-12

PRIOR APPLICATION NUMBER: US 09/472,667

PRIOR APPLICATION NUMBER: US 09/472,667

PRIOR PILING DATE: 1999-12-27

PRIOR PILING DATE: 1999-12-27

PRIOR PILING DATE: 1999-12-67

PRIOR PILING DATE: 1999-09-16

PRIOR PILING DATE: 1997-09-05

PRIOR PILING DATE: 1997-06-16

PRIOR PILING DATE: 1997-09-05

PRIOR PILING DATE: 1997-06-16

PRIOR PILING DATE: 1997-09-05

PRIOR PILING DATE: 1997-09-05

PRIOR PILING DATE: 1997-06-16

PRIOR PILING DATE: 1997-09-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1801 CCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1801 CCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 2
US-09-750-240-5
                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                  P Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QY
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                              δ
                                                             g
                                                                                             Ω
                                                                                                                      g
                                                                                                                                                      Q
Dp
                                                                                                                                                                                                                QY
                                                                                                                                                                                                                                                                                       Qy
Db
                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
```

```
CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/09750240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 10, Application US Patent No. US20020103147A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        × ĸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Hammon, H. K
APPLICANT: Insel, P. A
APPLICANT: Ping, P. A
APPLICANT: POSt, S. R.
APPLICANT: Gao, M.
                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                            .09-750-240-10
                                          1023
                                                         1656
                                                                       1083
                                                                                     1716
                                                                                                   1143
                                                                                                                1776
                                                                                                                              1203
                                                                                                                                                          1263
                                                                                                                                                                                      1323
                                                                                                                                                                                                   1956
                                                                                                                                                                                                                  1383
                                                                                                                                                                                                                               2016
                                                                                                                                                                                                                                             1443
                                                                                                                                                                                                                                                          2076
                                                                                                                                                                                                                                                                                       2136
                                                                                                                                                                                                                                                                                                     1563
                                                                                                                                                                                                                                                                                                                  2196
                                                                                                                                                                                                                                                                                                                                1623
                                                                                                                                                                                                                                                                                                                                                           1683
                                                                                                                                                                                                                                                                                                                                                                         2316
                                                                                                                                                                                                                                                                                                                                                                                       1743
                                                                                                                                                                                                                                                                                                                                                                                                    2376
                                                                                                                                                                                                                                                                                                                                                                                                                  1803
                                                                                                                                                                                                                                                                                                                                                                                                                                2436
  1536
                963
                                                                                                                                                                                                                                                                          1503
                                                                                              QY
Db
                                                                                                                                                                   Db
Qy
Qy
 음
              Qy
Db
                                       δ
                                                    QΩ
                                                                    Qy
Db
                                                                                                                           οy
                                                                                                                                       g
                                                                                                                                                     δ
                                                                                                                                                                                                                           95
P
                                                                                                                                                                                                                                                                    S
S
                                                                                                                                                                                                                                                                                               oy
Ob
                                                                                                                                                                                                                                                                                                                          ٥.
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                      òγ
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                               ö
                                                                                                                                                                                                                                                                  1055
                                                                                                                                                                                                                                                                                                                                                                                                           1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1535
                                                                                                                                                                                                                                                                                       302
                                                                                                                                                                                                                                                    422
                                                                                                                                                                                                                                                                                482
                                                                                                                                                                                                                                                                                                           542
                                                                                                                                                                                                                                                                                                                                       602
                                                                                                                                                                                                                                                                                                                                                                                                                                                     842
                                                                                           695
                                                                                                         122
                                                                                                                       755
                                                                                                                                     182
                                                                                                                                                   815
                                                                                                                                                                 242
                                                                                                                                                                              875
                                                                                                                                                                                                          935
                                                                                                                                                                                                                        362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             962
                                                                             62
                                                                                                        GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                   CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT
                                                                                                                                           GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                 GCTGCCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                TAACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGCAGACCC
                                                                                                                                                                                            TGTGCTGCTGCTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAGGT
                                                                                                                                                                                                                        GTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                                                                    GCATGAGAATCGGCAGCAGGAGCGGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCAT
                                                                                                                                                                                                                                                                                GCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGT
                                                                                                                                                                                                                                                                                                                                                                                             GTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGCATCCACAGGGGGGGGGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                         CATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG
                                                 3549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                 Length
                                                                Indels
                                                  DB 10;
                                                               1;
                                                Score 1808.4;
Pred. No. 0;
0; Mismatches
Windows Version 4.0
                                                              ;
0
                                                99.8%;
llarity 99.9%;
Conservative (
                             sapiens
 for
                                                        Best Local Similarity
Matches 1809; Conserv
FastSEQ
; SOFTWARE: FastSEQ; SEQ ID NO 5
; LENGTH: 3549
; TYPE: DNA
; ORGANISM: HOMO S
US-09-750-240-5
                                                 Query Match
                                                                                                                                                                                                                                                                                             9501
                                                                                                                                                                                                                                                                                                                        1116
                                                                                                                                                                                                                                                                                                                                                   1176
                                                                                                                                                                                                                                                                                                                                                                               1236
                                                                                                                                                                                                                                                                                                                                                                                             663
                                                                             m
                                                                                           989
                                                                                                                       969
                                                                                                                                                 756
                                                                                                                                                                              816
                                                                                                                                                                                                          876
                                                                                                                                                                                                                        303
                                                                                                                                                                                                                                                    363
                                                                                                                                                                                                                                                                                423
                                                                                                                                                                                                                                                                                                                                                                                                           1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            903
                                                                                                         63
                                                                                                                                    123
                                                                                                                                                                183
                                                                                                                                                                                            243
                                                                                                                                                                                                                                                                                                           483
                                                                                                                                                                                                                                                                                                                                      543
                                                                                                                                                                                                                                                                                                                                                                  603
                                                                                                                                                                                                                                                                                                                                                                                                                         723
                                                                                                                                                                                                                                                                                                                                                                                                                                                    783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                843
                                                                             ŏ
                                                                                        g
                                                                                                       ٥y
                                                                                                                    g
                                                                                                                                   ά
                                                                                                                                              g
                                                                                                                                                            οy
                                                                                                                                                                          q
                                                                                                                                                                                           δy
                                                                                                                                                                                                      g
                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                             Q
Dp
                                                                                                                                                                                                                                                                                                     ογ
                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                    Qy
Db
                                                                                                                                                                                                                                                                                                                                                             δý
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
```

```
2135
                                                                                                               1142
                                                                                                                                                                                                                                                                                                                                                                              2015
                                                                                                                                                                                                                                                                                                                                                                                                                                      2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1802
                                                      1082
                                                                                                                                                                         1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2435
                                                                                                                                                                                                                                                 CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGA
                                                                                                                                                                                                                                                                                                         11896 TGCCCGCAGCATGATGATCAGCTGCGGGAAGGACCATGTGCTCTTTGCTCACCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG
            GGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGAC
                                                                                                                                                                         CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGGGG
                                                                                                                                                                                                                                                                                          TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTCCA
                                                                                                                                                                                                                                                                                                                                                   GAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGT
                                                                                                                                                                                                                                                                                                                                                                 CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCATTGTCCGCTCACGGGCACATAGCACCAGTTGGCATCTTTTCCGTCCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GITTACTICTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGCGCCAGCCAGAAACGGAAAGAGAGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTCG
CCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCT
```

```
1536
                                                                                                                                                                                                                                                                                                                              1836
                                                                                                                                                                                                                                                                                                                                                                 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1680
                                         1356
                                                                           1416
                                                                                                              1476
                                                                                                                                                                                    1596
                                                                                                                                                                                                    1020
                                                                                                                                                                                                                      1656
                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                         1716
                                                                                                                                                                                                                                                                         1140
                                                                                                                                                                                                                                                                                           1776
                                                                                                                                                                                                                                                                                                             1200
                                                                                                                                                                                                                                                                                                                                               1260
                                                                                                                                                                                                                                                                                                                                                                                   1320
                                                                                                                                                                                                                                                                                                                                                                                                    1956
                                                                                                                                                                                                                                                                                                                                                                                                                      1380
                                                                                                                                                                                                                                                                                                                                                                                                                                       2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1740
      1296
                       720
                                                          780
                                                                                             840
                                                                                                                                900
                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1620
                      ŏ
                                       g
                                                         ò
                                                                         g
                                                                                            ò
                                                                                                             q
                                                                                                                               Qγ
                                                                                                                                            g
                                                                                                                                                                  ò
                                                                                                                                                                                g
                                                                                                                                                                                                  οy
                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                 δý
                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                              ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           695
                                                                                                                                                                                                                                                                                  122
                                                                                                                                                                                                                                                                                                   755
                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                      815
                                                                                                                                                                                                                                                                                                                                                        242
                                                                                                                                                                                                                                                                                                                                                                        875
                                                                                                                                                                                                                                                                                                                                                                                          302
                                                                                                                                                                                                                                                                                                                                                                                                            935
                                                                                                                                                                                                                                                                                                                                                                                                                              362
                                                                                                                                                                                                                                                                                                                                                                                                                                              995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 719
                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                         GCATGAGAATCGGCAGCAGCAGCGGCTGCTGTCGCTATTGCCCCAGCACGTTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGCAGCCCCTCTGCGGCCTCTGGTGCCCTGTTCTTTGTATACATCGCATACACGCT
                                                                                                                                                                                                                                                                                                                    CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                              GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                             GTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCCAGTGCACTGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGA
                                                                                                                                                                                                                                              TAACGTGGTGCTGGCCATCCTGGCGGCGCAGGTCGGGGGGGCGCTTTCGCAGCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGATGAAAGAAGACATCAACACAAAAAAAAGAAGAC---ATGTTCCACAAGATCTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGCTGCCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 3552;
                                                                                                                                                                                                                              3,
                                                                                                                                                                                                                              21; Indels
    CONGESTIVE HEART
                                                                                                                                                                                                              DB 10;
                                                                                                                                                                                                            Score 1763.4;
Pred. No. 0;
0; Mismatches
TITLE OF INVENTION: GENE THERAPY FOR CONGESTITLE OF INVENTION: FAILURE
FILE REFERENCE: 220002056735
CURRENT APPLICATION NUMBER: US/09/750,240
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US 09/472,667
PRIOR FILING DATE: 1999-12-27
PRIOR FILING DATE: 1999-12-27
PRIOR FILING DATE: 1998-01-16
PRIOR FILING DATE: 1998-01-16
PRIOR FILING DATE: 1990-05
PRIOR FILING DATE: 1997-06-16
SOFTWARE: FASTSEQ FOR WINDOWS VETSION 4.0
SEQ ID NO 10
LENGTHERS
                                                                                                                                                                                                             97.3%;
98.7%;
                                                                                                                                                                                                            Query Match 97.3
Best Local Similarity 98.7
Matches 1789; Conservative
                                                                                                                                                                                ; ORGANISM: Homo sapiens
US-09-750-240-10
                                                                                                                                                                          TYPE: DNA
                                                                                                                                                                                                                                              ٣
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1236
                                                                                                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                   123
                                                                                                                                                                                                                                                                                                                                     756
                                                                                                                                                                                                                                                                                                                                                       183
                                                                                                                                                                                                                                                                                                                                                                                         243
                                                                                                                                                                                                                                                                                                                                                                                                           876
                                                                                                                                                                                                                                                                                                                                                                                                                                              936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 966
                                                                                                                                                                                                                                                                                                                                                                        816
                                                                                                                                                                                                                                                                                                                                                                                                                             303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99
                                                                                                                                                                                                                                                              ద
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                  pp
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                δý
                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                        δý
                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1679
                                                                                                                                                  1475
                                                                                                                                                                                                                                                                                                    1595
                                                                                                                                                                                                                                                                                                                                                                               1655
                                                                                                                                                                                                                                                                                                                                                                                                                  1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2435
TGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGGT 1355
                                                                                                              839
                                                                                                                                                                                       899
                                                                                                                                                                                                                                                                959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACCAAGGACTCCAAGGCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGAAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2376 CAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTT
                                                     CGTGGGCATCCACAGGGGGGGGGGGGGCATGCGTGGCTTGCGGAAATGGCAGTT
                                                                                                                                                                                       CGATGTGTGTCCAATGATGATGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGG
                                                                                                                                                                                                                             CGATGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGAGGCAGGAGGCCGGGCTGG
                                                                                                                                                                                                                                                                                                                                         AGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                    CCTGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGGTTCGGAGGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAATTACTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTT
                                     AGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCG
                                                                                                              CGTGGGCATCCACACCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTT
                                                                                                                                                                                                                                                                  CCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTT
```

```
722
                                                                                                                                                                                                                                                                                                                                                                                1082
                                               1322
                                                                                                                                                                                                                                                                                                                        1742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1262
                             542
                                                                                                                                                                                                                                                                                                      962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1502
                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
      g
                            οχ
                                               g
                                                              οy
                                                                                g
                                                                                                       ò
                                                                                                                     QQ
                                                                                                                                        οy
                                                                                                                                                            g
                                                                                                                                                                                   οy
                                                                                                                                                                                                  ద
                                                                                                                                                                                                                       δŏ
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGG 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAGAATCGGCAGCAGCAGCGGCTGCTGCTCGGTATTGCCCCAGCACGTTGCCATGG 424
                                                                                                                                                                                                                                                                                                                                                                                                  TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTGGAAGCAGCTCGGTGCCAATG 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC 364
                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCCCCTCTGCGGCCTCTGGTGCCCTGTTTTTTTTTACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125 TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGA 184
                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                  A HUMAN ADENYLYL
                                                                                                                                                                                                                                                                                                                                                                                       5 ACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3;
                                                                                                                                                                                                                                                                                                                                                   Length 4942;
                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                          APPLICANT: TOMINSON, James E.
APPLICANT: TOMINSON, James E.
APPLICANT: TOMINSON JAMES E.
TITLE OF INVENTION: CLOUNING AND CHARACTERIZATION OF A HI
TITLE OF INVENTION: CYCLASE
FILE REFERENCE: 44481-5028-01-0S
CURRENT APPLICATION NUMBER: US/10/201,000
CURRENT FILING DATE: 200-07-24
PRIOR APPLICATION NUMBER: US/09/474,076
PRIOR APPLICATION NUMBER: US/09/474,076
PRIOR APPLICATION NUMBER: OS/09/13694
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1998-07-01
PRIOR APPLICATION NUMBER: 60/070,904
PRIOR FILING DATE: 1997-07-01
                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                Score 1763; DF Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                            cyclase
                                                                 Sequence 1, Application US/10201000 Publication No. US20020187540A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                           adenylyl
                                                                                                                                                                                                                                                                                                                                                  97.38;
98.78;
                                                                                                                                                                                                                                                    PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                       Conservative
                   2448
                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: human type VI
                                                                                                                                                                                                                                                                                                           ; NAME/KEY: CDS
; LOCATION: (145)..(3648)
US-10-201-000-1
                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin Ver.
SEQ ID NO 1
           2436 TCCTGAGTACTTC
 TCCTGAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                   Matches 1788;
                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local 3
1800
                                                                                                                                                                                                                                                                                                                                                                                                          782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1202
                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                               842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                425
ŏ
                 임
                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
```

```
1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1441
                                                                                                                         1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1501
                                                                                                                                                                                                                                                                                            1621
                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                     721
                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                         901
                                                                                                                                                                                                                                                                                                                                                                               961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTG 1621
                                          601
                                                                                                              2042 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTCTGCTCACCTTCC
                                                                                                                                                                   1142 TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                           GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1322 AGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1382 TIGCCIGIGCCCIGIIGGICTICIGCIICATCIGCIICAICCAGCIICIAAIITIICCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1442 ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                602 AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                     662 TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                             GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1022 TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTCC
                                          CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
```

```
960 AGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTTGAGACTTTCCTCAT 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020 CCTGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGAC 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1080 TCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCG 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1854 GGGTGCCCAAGATGCTCTGAACCTGAAGATGAGGTGGATGAGTTCCTGGGCCGAGCAT 1913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTT 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1914 CGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTCTGCTCACCTT 1973
   837 GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                    480 ACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                 540 AFCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGA
                                                                                                                                                                                                                                                                                                                                                                                  1197 ATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCTTGAATGAGCTCTTTGCCCGGTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1497 IGATGTCTGGTCAAACGATGTGACCCTGGCTAACCACATGGAGGCCGGGGC---GGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGCTGCCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGAGTTCCTGAGCCGTGCCAT
                                                                                                  GTCTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCGGGCTCCACCTGCA
                                                                                                                                                                  GCATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT
                                                                                                                                                                                                                                 423 GGAGATGAAAGAAGACATCAACACAAAAAAGGAGAC----ATGTTCCACAAGATCTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660 TGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                720 AGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACGTGTGAATGTGAACATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900 CCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCC
                                   243 TGTGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACTATCCAGCAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 780 CGTGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1260
                                                                                                  303
                                                                                                                                                                 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                   δ
                                                        . q
                                                                                                ò
                                                                                                                             g
                                                                                                                                                                 δy
                                                                                                                                                                                               qq
                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
                  2401
                                                                                                                ATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTC 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGCAGCCCCTCTGCGGGCCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: HORANTION:
APPLICANT: HORANTION:
APPLICANT: Paig, P.
APPLICANT: Poig, P.
APPLICANT: Post, S. R.
APPLICANT: Gao, M.
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART
TITLE OF INVENTION: EALLURE
FILE REFERENCE: 220002056723
CURRENT FILING DATE: 2001-10-12
FRIOR APPLICATION NUMBER: US 09/472,667
PRIOR APPLICATION NUMBER: US 09/008,097
PRIOR APPLICATION NUMBER: US 09/008,097
PRIOR APPLICATION NUMBER: US 08/924,757
PRIOR APPLICATION NUMBER: US 08/708,661
PRIOR APPLICATION NUMBER: US 08/708,061
PRIOR APPLICATION NUMBER: US 08/708,061
PRIOR APPLICATION NUMBER: US 08/708,001
SEQ ID NO 12
LENGTH: 3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          77.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        91.5%; Score 1657.8;
95.4%; Pred. No. 0;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                             Sequence 12, Application US/09750240 Patent No. US20020103147A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: Modified AC-VI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 91.5
Best Local Similarity 95.4
Matches 1730; Conservative
                                                                                                                                                                                                                                               CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                               CTGAGTACTIC 2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Artificial
                                                                                                                                                                                                                                                                                                                                                                                             ; GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-750-240-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                              2402
                                                                                                              1682
                                                                                                                                              2462
                                                                                                                                                                                                             2522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      717
                2342
                                                 1622
                                                                                                                                                                                1742
                                                                                                                                                                                                                                               1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                               2582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     183
                8
                                                 ò
                                                                              요
                                                                                                            ŏ
                                                                                                                                       Q
                                                                                                                                                                              οy
                                                                                                                                                                                                      g
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

779

839

629

479

422

1673

1553

```
425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1766
                                                                   125
                                                                                                         185
                                                                                                                                                                                                                                                                                                                                          542
                                                                                                                                                                                                                                                                                                                                                                                                                                         1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              902
                                                                                                                                                                                                                                                                                                                                                                                                                      662
                                                                                                                                                                                                                                                                                                                                                                                                                                                           722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 782
       g
                             οy
                                              qq
                                                                  δ
                                                                                  g
                                                                                                       ģ
                                                                                                                     QQ
                                                                                                                                        οy
                                                                                                                                                             g
                                                                                                                                                                                ò
                                                                                                                                                                                                g
                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                          δý
                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/10175158
Publication No. US20030008371A1
GENERAL INFORMATION:
APPLICANT: Tomininson, James
APPLICANT: Tomininson, James
APPLICANT: Cor Therapeutics, Inc.
TITLE OF INVENTION: CCVING AND CHARACTERIZATION OF A HUMAN ADENYLYL
TITLE OF INVENTION: CZCLASE
FILE REFERENCE: 44481-5027-01-US
CURRENT FILING DATE: 1999-12-29
PRIOR FILING DATE: 1999-12-29
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR FILING DATE: 1997-07-01
                                                                                                                                                       1619
                                                                                                                                                                                                                                                                      1499
                                                                                               2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                          GCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTC
CCAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTA
         1974 CCAGAGAGATCTTGAGAAGAACTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCTA
                                      CGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCC
                                               ACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGGTGCTGCTAATCACCT
                                                                                              ACACTCCACCCTGATGCTTGGGATCTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGT
                                                                                                                GCTGATCTGTGCTGTGTTCCTGTGGTTCTCTTGTTCCCTAAGGCCCTGCAACGTCTGTC
                                                                                                                                                      CCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCT
                                                                                                                                                                TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACCCCCCATACGGAGCTG
                                                                                                                                                                                                    27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 4523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 895; DB 9; Length 45
Pred. No. 1.4e-231;
); Mismatches 525; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: human type V adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 49.4
Best Local Similarity 69.8
Matches 1277; Conservative
                                                                                                                                                                                                                                                                                                                     TCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (139)..(3921)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: CDS
LOCATION: (139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 4523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ) LUCALLUN: (1) US-10-175-158-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PYPE: DNA
1320
                                                       2034
                                                                                                                                                                                                                                                                                                            1800
                                                                                                                                                                                                                                                                                                                               2454
                                     1380
                                                                            1440
                                                                                             2094
                                                                                                                1500
                                                                                                                                   2154
                                                                                                                                                     1560
                                                                                                                                                                                          1620
                                                                                                                                                                                                             2274
                                                                                                                                                                                                                                1680
                                                                                                                                                                                                                                                   2334
                 g
ò
                                    ŏ
                                                  Ω
                                                                       Q
D
                                                                                                          oy
oy
                                                                                                                                                                 g
                                                                                                                                                                                    Qγ
                                                                                                                                                                                                         g
                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                     Óγ
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                         q
```

```
1405
                                                                                                                                                                                                                                                                                                                                                                   1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1945
                          1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGCGCCCAGCAGAAACGGAAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1082 GGGCCAACTCCATGGAAGGGCTGATGCCGGATGGGTTCCTGATCGTGCCTTCTCC---- 1137
                                                                                                                                                                            244
                                                                                                                                                                                                                                   304
                                                                                                                                                                                                                                                                                                                                                     424
                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
64
               GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC
                                                                                                                                                                           TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                               842 ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCTCC
                                                                                                                  TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTTGA
                                                                                                                                                                                                                                                                                          305 CTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                     365 ATGAGAATCGGCAGCAGGAGCGGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                               AGATGAAAGAAGACATCAACACAAAAAAAGAAGA---CATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         482 AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGGCATCCACAGCGGGGGGGGGGTGCGGCGTCCTTGGCGTAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
```

œ

misc feature

```
αq
                                                                                                                                                                   a
                                                                                                                                                                                          ò
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
1610 CCGTCCTGCTTGTTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCA 1669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCAGCAG-----CTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCA 1783
                                                ACTIGICATEGCAACCAGGTGTCCAAGGATGAAGCGGATGGGCTTTGAAGACCCCA---
                                                                                               ---AGGACAAGAACGCCCAGGAGAGTGCGAACCTGAGGATGAAGTGGATGAGTTTTCTGG
                                                                                                                                           2540 CCTIGETGTGTTTGTGTGTGTGTGTGTCTCCTGCGTAAAGCTCTTCCCCTCCCACCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGACAACCGGGGCCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGA
                                                                                                                                GCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTT
                                                                                                                                                                              TGCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCT
                                                                                                                                                                                         TCGGAGCCTACGTTGCCTGTGGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTC
                                                                                                                                                                                                                                                                         1430 TAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                ------CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGCTTCCAGCA
                                                                                                                                                                                                                                                                                                                     1490 TAATCACCGTGCTGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGC
                                                                                                                                                                                                                                                                                                                                                                      AACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2780 rGCCGGAGTCGCCCGTCAACTACAGCCTGGGCGATGAGCAGGCCTTCTGTGGCCAGCCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Rosen et al.
TITLE OF INVENTION:
CURRENT APPLICATION NUCLEIC Acids, Proteins and Antibodies
FILE REPERENCE: PA105
CURRENT APPLICATION NUMBER: US/09/925,297
CURRENT FILIG DATE: 2001-08-10
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR FILING DATE: 2000-03-08
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 928
SOFTWARE: PATCHTIN Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2840 GGCCCAACTGCAACTTCCCCGAGTACTTC 2868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1784 TGCCCACCTGCAGCTTTCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 352, Application US/09925297 Patent No. US20020081659A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-925-297-352
                                                                                1190
                                                                                                      2243
                                                                                                                               1250
                                                                                                                                                      2300
                                                                                                                                                                              1310
                                                                                                                                                                                                                           1370
                                                                                                                                                                                                                                                                                                                                                                                                                                          2660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1730
                                  à
                                                       qq
                                                                             à
                                                                                                    g
                                                                                                                             ò
                                                                                                                                               g
                                                                                                                                                                       ŏ
                                                                                                                                                                                                ద
                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                     엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

```
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1002 CATTGAGACTTTCCTCATCCTGGGCGCC-AGCCAGAAACGGAAAGAGGAAAAGGCATGC 1060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          942 GGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCA 1001
                                                                                                                                                                                                                                                                                                                                                                                                                          333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       453
                                                                                                                                                                                                                                                                                       94 GAACCTGGAAGAGCCAGCAGCAGCAGGAGAACCTCATCCTTCCATCCTGCCCAAGCA 153
                                                                                                                                                                                                                                                                                                                                          461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          702 CTGTGTGGGGGTAGGGGGTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACGG 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 294 AGCAGAGGIGTCTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCT
                                                                                                                                                                                                                   354 CCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCA
                                                                                                                                                                                                                                                                                                                                          CGTTGCCATGGAGATGAAAGAAGACATCAACACA-------AAAAAAAAAGAAGACAT
                                                                                                                                                                                                                                                                                                                                                                         154 CGTGGCTGACGAGATGCTGAAAGACATGAAGAAAGACGAGAGCCAGAAGGACCAGCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                            GTTCCACAGAGATCTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               522 GGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   582 GCTCTTTGCCCGGTTTGACAAGCTGCCTGCGGAGAATCACTGCCTGAGGATCAAGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       642 GGGGGACTGTTACTACTGTGTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             822 CTTGCGGAAATGGCAGTTCGATGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    882 AGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGG
                                                                                                                          Length 2601;
                                                                                                                            DB 10;
                                                                                                                                            2e-76
                                                                                                                          Score 319.4;
Pred. No. 3.2e
0; Mismatches
                       O
                                                                          O
                       ö
                                                                          ö
LOCATION: (2520)
CHER INFORMATION: n equals a,t,g,
NAME/KEY: misc feature
LOCATION: (2572)
OTHER INFORMATION: n equals a,t,g,
US-09-925-297-352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/10121911
Patent No. US20020164632A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1061 TGGCCAAGCTGCAGCGGAC 1079
                                                                                                                            17.6%;
64.5%;
                                                                                                                                            Best_Local Similarity 64.5
Matches 515; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   814 TGGCCTCAATGGCTCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-121-911-2
                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                        414
                                                                                                                                                                                                                                                                                                                                                                                                            462
```

```
Sequence 1, Application US/09751100B Patent No. US20020142436A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.0%;
63.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                || ||||| ||||
1608 GGATGAGAAGGGCA 1621
                                                                                                                                                                                                                                                                                                                                                 1044 AGAGGAGAAAGGCA 1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 329; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: CDS
LOCATION: (43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 4473
                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-751-100B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                     924
                                                                                                                                                                                                                                                                                          984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                              QQ
                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                     g
                                                                     ò
                                                                                         Q
                                                                                                                  δ
                                                                                                                                                                                ò
                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                    3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1008 GCCAGAGAGCACTAACAATTTCCACAGGCTCTATGTCAAGAGGCACCAGGGAGTCAGCGT 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               458 -----ACATGTTCCACAGATGTTCTACATACAGAAGCATGACAATGTCAGCAT 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCG 683
                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCTCCT 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGAT 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCCTTGGGCATGCGGGACGCCGCCGCCGCCCTCGCTCACTCTCGCATCTGCT 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            294 AGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCT 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            828 GATGGAGCGCCCTGCGGGCCACGTTCCGGGAGGCACTCAGCTCCCTGCACGCCG 887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCA 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            708 GGTCCTCGGGCTGTATCTTGGCCCACACCGGACTCACGGCCTGCACTGCTGCCGCAGTT 767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCC 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 768 GGCAGCAAACGCAGTGCTGTTCCTGTGCGGGAACGTGGCAGGAGTGTACCACAAGGCGCT 827
                                                                                                                                                                                                                                                                                                                                                                                          6 CGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGCAGACCCGCG 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTGGCCTGGCAACTT-----AACCGTGGTGATGCCTTCCTCTG--GAAGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      504 CCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 3518;
                                                                                                                                                                                                                                                                                                                                    0; Mismatches 435; Indels
GENERAL INFORMATION:
APPLICANT: Kapeller-Libermann, Rosana
TITLE OF INVENION: 21529, A NOVEL ADENYLATE CYCLASE;
FILE REFERENCE: 5800-47
CURRENT PILING DATE: 2002-04-12
PRIOR APPLICATION NUMBER: US/9/412,210
PRIOR FILING DATE: 1999-10-05
NUMBER OF SEQ ID NOS: 2
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 3518
                                                                                                                                                                                                                                                                                                         15.7%; Score 284; DB 9; 56.4%; Pred. No. 1.4e-66;
                                                                                                                                                                                                                                      adenylate cyclase
                                                                                                                                                                                                       NAME/KEY: misc_feature
LOCATION: (0)...(0)
OTHER INFORMATION: 21529 at
NAME/KEY: CDS
LOCATION: (247)...(3480)
                                                                                                                                                                                                                                                                                                                                   Matches 617; Conservative
                                                                                                                                                                                ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                       LOCATION: (0);
OTHER INFORMA;
NAME/KEY: CDE;
LOCATION: (24)
US-10-121-911-2
                                                                                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                          528
                                                                                                                                                                                                                                                                                                                                                                                                                     99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
```

```
1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1488 cerissecerserisseas descentarsers de asses 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTACCTCAAGGAGCAGCACTTTGAGACTTTCCTCATCCTGGGCGCCCAGCAGAAACGGAA 1043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1548 CTACCTTCGGGAGCTAGGGGAGCCTACCTATCTGGTCATCGATCCACGGGCAGAGGAGGA 1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1246 GGTTTCACCAAGATGAGCGCCAACAAATCTGCGCATGCCTTGGTAGGCCTACTCAATGAC 1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAG 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ITCCACAAGAICTACATACAGAAGCAIGACAAIGTCAGCAICCIGITIGCAGACAITGAG 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             703 TGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGT 762
684 GGCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCT 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCTTTGCCCGGTTTGACAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTG
                                                                                                                                                                                                                                                                                                                           864 CCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTECAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGGACTGTTACTACTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGC
                                                                                                                                                                                                                                                        744 GGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 4473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Use Therefor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 216.8; DB 10; Length
Pred. No. 2.2e-48;
0; Mismatches 187; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; LOCATION: (43)..(4101)
; OTHER INFORMATION: Adenylate cyclase coding region US-09-751-100B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Medical Research Council TITLE OF INVENTION: Human Adenylate Cyclase of TITLE OF INVENTION: Human Adenylate Cyclase of CURRENT APPLICATION NUMBER: US/09/751,100B CURRENT FILING DATE: 2000-12-28 NUMBER OF SEQ ID NOS: 104 SEQ ID NO IN VERSION 3.1
```

ö

```
q
                                                                                                     ò
                                                                                                                                                                               ò
                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/10071223

Sequence 1, Application US/10071223

Sequence 1, Application US/10071223

Sequence 1, Application

Sequence 1, Application

APPLICANT: Storm, Daniel R.

APPLICANT: Storm, Daniel R.

APPLICANT: Tonlinson, James E.

APPLICANT: Tonlinson, James E.

APPLICANT: COR Therapeutics, Inc.

APPLICANT: OR Therapeutics, Inc.

APPLICANT: OR Therapeutics, Inc.

APPLICANT: OR THERAPHICANION OF A HUMAN ADENYLYL

TITLE OF INVENTION: CYCLASE

FILE REFERENCE: 44481-5029-02-03

FRIOR FILING DATE: 1999-12-29

FRIOR PAPLICATION NUMBER: 05/1086/13541

FRIOR PAPLICATION NUMBER: 06/098,559

FRIOR FILING DATE: 1998-07-01

FRIOR FILING DATE: 1998-07-01

FRIOR FILING DATE: 1997-07-01

FRIOR PRICATION NUMBER: 08/098/559

FRIOR FILING DATE: 1997-07-01

FRIOR FILING DATE: 1997-07-01

FRIOR FILING DATE: 1997-07-01

FROME APPLICATION NUMBER: 08/098/559

FRIOR FILING DATE: 1997-07-01

FROM APPLICATION NUMBER: 08/098/559

FROM TOWERS OF SEQ ID NOS: 3

SOFTWARRE: PARCHILL VET. 2.0

FROM IN THE PARCHILL VET. 2.0
1606 CAGCTGGGAGTGGCTGGCAAAGTTCACATATCTGAGGCCACTGCAAAATACTTAGACGAC 1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1243 CAAGTCTGCCCAGGTGGGTCTCCTGAACGATCTGTTCGGTCGCTTCGACCGCCT 1302
                                                                                                                                                                                                               883 GCAGGAAGCCGGGCTGGCCGCATCCACATCGGGCAACACTGCAGTACCTGAACGGG 942
                                                                                                                                    823 TTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAA 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCA 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           546 GIGCACIGCGCAGGAGCIGGICAIGACCCIGAAIGAGCICITIGCCCGGITIGACAAGCI 605
                                                        763 GTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 11.6%; Score 209.4; DB 12; Length 4985; Best Local Similarity 62.1%; Pred. No. 2.3e-46; Matches 330; Conservative 0; Mismatches 201; Indels 0;
                                                                                                                                                                                                                                                                                                                           1666 AGGTATGAAATGGAAGATGGGAGAGTTATTGAGCGC 1701
                                                                                                                                                                                                                                                                                            943 GACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGC 978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: human type IX adenylyl cyclase FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: CDS
LOCATION: (17)..(3898)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 4985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; LOCATION: (
US-10-071-223-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  486
                                                        ò
                                                                                                                                δý
                                                                                                                                                                g
                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
1945 GATCAAGGCCATCGAGGATCTGCCAGGAGAAGAAGGAGATGGTGAACATGAGAGTCGG 2004
                                                                                                                                                              786 CATCCACAGGGGGGGGGGGGGGCGTGCGTTGGCTTGCGGAAATGGCAGTTCGATGT 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1645 GAAGAAAAAGTCTTCCATCCAAAAAGCTCCTATAGCCTTCCGCCCTTTTAAGATGCAGCA 1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         486 GCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCA 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  546 GTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCT 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 606 GCCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTC 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCCACAGGGGGGGGGGGTGCTGGGGTCCTTGGGTTGGGGAAATGGCAGTTCGATGT 845
                                                                                                                                                                                      GTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCAT
                                                                                                                                                                                                                                                                   AGGGCTGCCGGAGGCCCGGCCGACCATGCCCACTGCTGTGGAGATGGGGGGTAGACAT
                                                                                 GATTGAGGCCATCTCGCTGGTACGTGAGGTGACGTGTGAATGTGAACATGCGCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 5515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                  906 CCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGA 956
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 98, Application US/09751100B
Patent No. US20020142436A1
GENERAL INFORMATION:
APPLICAMT: Medical Research Council
TITLE OF INVENTION: Human Adenylate Cyclase and Use Therefor FILE REFERENCE: P27948A
CURRENT APPLICATION NUMBER: US/09/751,100B
CURRENT FILING DATE: 2000-12-28
NUMBER OF SEQ ID NOS: 104
SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 207.8; DB 10;
Pred. No. 6.5e-46;
0; Mismatches 202;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.5%;
62.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 62.08
Matches 329; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; NAME/KEY: CDS
; LOCATION: (539)..(4600)
; OTHER INFORMATION:
US-09-751-100B-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
US-09-751-100B-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 98
999
                                                                               726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 786
```

ö

```
PRICE REPRING. TO SOUR SET OF SOUR APPLICATION NUMBER: 00/11-21 CURRENT APPLICATION NUMBER: 00/11-21 CURRENT FILING DATE: 2000-01-31 CURRENT FILING DATE: 2000-01-31 CURRENT FILING DATE: 2000-06-28 PRIOR APPLICATION NUMBER: 00/214,886 PRIOR PELICATION NUMBER: 00/220,963 PRIOR PELICATION NUMBER: 00/220,963 PRIOR PELICATION NUMBER: 00/221,487 PRIOR PELICATION NUMBER: 00/221,487 PRIOR APPLICATION NUMBER: 00/221,496 PRIOR APPLICATION NUMBER: 00/213,290 PRIOR PELICATION NUMBER: 00/218,290 PRIOR PELICATION NUMBER: 00/225,267 PRIOR PELICATION NUMBER: 00/225,267 PRIOR PELICATION NUMBER: 00/225,270 PRIOR PELICATION NUMBER: 00/226,868 PRIOR PELICATION NUMBER: 00/226,869 PRIOR APPLICATION NUMBER: 00/226,869 PRIOR PELING DATE: 2000-09-12 PRIOR PELING DATE: 2000-09-12 PRIOR PELING DATE: 2000-09-12 PRIOR PELING DATE: 2000-09-21 PRIOR APPLICATION NUMBER: 00/226,594 PRIOR PELING DATE: 2000-09-21 PRIOR PELING DATE: 2000-09-21 PRIOR PELING DATE: 2000-09-20 PRIOR APPLICATION NUMBER: 00/226,594 PRIOR PELING DATE: 2000-09-20 PRIOR APPLICATION NUMBER: 00/226,594 PRIOR PELING DATE: 2000-09-20 PRIOR PELING DATE: 2000-09-20 PRIOR PELING DATE: 2000-09-20 PRIOR APPLICATION NUMBER: 00/226,266 PRIOR PELING DATE: 2000-09-29 PRIOR FILING DATE: 2000-09-29 PRIOR FILING DATE: 2000-09-29 PRIOR FILING DATE: 2000-09-29 PRIOR PELING DATE: 2000-09-29 PRIOR PELING DATE: 2000-09-29 PRIOR PELING DATE: 2000-09-29 PRIOR PELING DATE: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 60/234,997 FILING DATE: 2000-09-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
2005 GGTGCACACGCGCACCGTCTTGCGGCATCCTGGGCATGAGGGTTAAATTTGACGT :2064
                                                                                                                             2065 GTGGTCCAACGATGTGAACCTGGCCAATCTCATGGAGCAGCTGGGAGTGGCCGGCAAAGT 2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 GCACTCAGGCAGCGTACTGTGGAGTCATCGGGCTGCAGAAGTGGCAGTACGACGTTTG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 ccKesccarcagaaacrecescaeccacrescerescarcaacarecererescerer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       789 CCACAGCGGCGCGCGTGCACTGCGGCGTCCTTGCGGAAATGGCAGTTCGATGTGTG 848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         849 GTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCA 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     729 TGAGGCCAICTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCAT 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               669 GCTGCCGGAGGCCCGGGCCGACCATGCCCACTGTGTGGAGATGGGGGGTAGACATGAT 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ,
0
                                                                                                                                                                                                          1125 TCACATTTCTGAGGCCACCGCAAATACTTAGATGACCGGTACGAAATGGA 2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 9; Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Rosen et al.

TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies FILE REFERENCE: PT232
CURRENT APPLICATION NUMBER: US/09/764,868
CURRENT APPLICATION NUMBER: 2001-01-17
Prior application data removed - refer to PALM or file wrapper NUMBER OF SEQ ID NOS: 1510
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 182
LENGTH: 330
                                                                                                                                                                               906 CCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGA 956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 71, Application US/09989442
Publication No. US20030013649A1
GENERAL INFORMATION:
APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 CATCACAGGGGTACCCTGCCCTGCTAGGGGTTATGCTGNGGA 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            909 CATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGA 956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 6.9%; Score 124.4; DB 9; Best Local Similarity 64.2%; Pred. No. 5.3e-24; Matches 185; Conservative 0; Mismatches 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) NAME/KEY: SITE
) LOCATION: (289)
S. OTHER INFORMATION: n equals a,t,g, or c
US-09-764-868-182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (272)
OTHER INFORMATION: n equals a,t,g, or NAME/KEY: SITE
CAGTION: (285)
OTHER INFORMATION: n equals a,t,g, or
                                                                                                                                                                                                                                                                                                                                                       Sequence 182, Application US/09764868
Patent No. US20020168711A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: SITE
                                                                                                                                                                                                                                                                                                                                    US-09-764-868-182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
US-09-989-442-71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                               RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                             q
                                                                             δλ
                                                                                                                             g
                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

PRIOR FILING DATE: 2000-09-05
PRIOR FILING DATE: 2000-09-05
PRIOR FILING DATE: 2000-09-05
PRIOR FILING DATE: 2000-09-05
PRIOR FILING DATE: 2000-10-02
PRIOR FILING DATE: 2000-10-02
PRIOR FILING DATE: 2000-10-02
PRIOR PAPLICATION NUMBER: 60/237,038
PRIOR PAPLICATION NUMBER: 60/236,370
PRIOR APPLICATION NUMBER: 60/236,970
PRIOR APPLICATION NUMBER: 60/236,970
PRIOR PAPLICATION NUMBER: 60/236,970 R FILING DATE: 2000-09-01
R APPLICATION NUMBER: 60/229,513
R FILING DATE: 2000-09-05
R APLING DATE: 2000-09-08
R FILING DATE: 2000-09-08
R APPLICATION NUMBER: 60/231,413 REFLIGNCE DATE: 2000-10-13

REPLICATION NUMBER: 60/241,787

REFLING DATE: 2000-10-20

REFLING DATE: 2000-11-08

REFLING DATE: 2000-11-08

REPLING DATE: 2000-11-17

REPLING DATE: 2000-11-17

REPLING DATE: 2000-11-17 R FILING DATE: 2000-09-27

R APPLICATION NUMBER: 60/230,438

R FILING DATE: 2000-09-06

R RAPLICATION NUMBER: 60/215,135

R FILING DATE: 2000-06-30

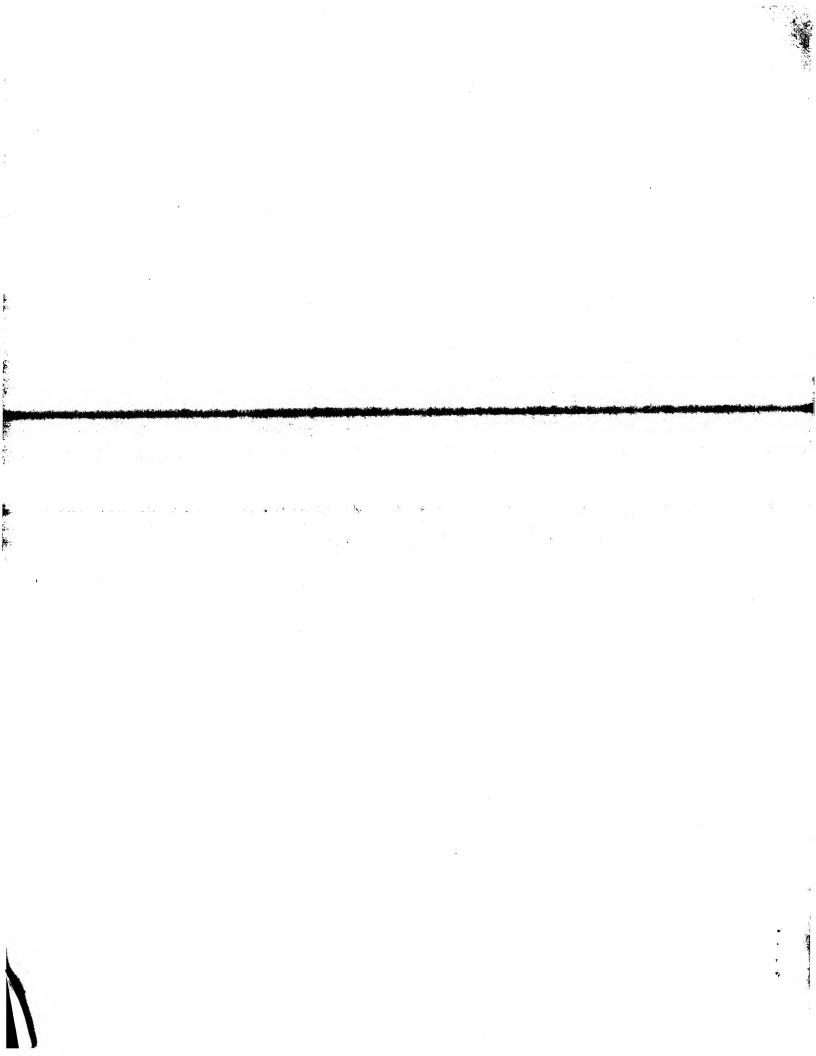
R APPLICATION NUMBER: 60/225,266 FILING DATE: 2000-10-02
APPLICATION NUMBER: 60/237,040
FILING DATE: 2000-10-02
APPLICATION NUMBER: 60/240,960
FILING DATE: 2000-10-20 AFFLING DATE: 2000-09-01
APPLICATION NUMBER: 60/229,287 FILING DATE: 2000-10-20
APPLICATION NUMBER: 60/239,935
FILING DATE: 2000-10-13
APPLICATION NUMBER: 60/239,937 FILING DATE: 2000-11-17
APPLICATION NUMBER: 60/226,681
FILING DATE: 2000-08-22 FILING DATE: 2000-08-14
APPLICATION NUMBER: 60/227,182
FILING DATE: 2000-08-22
APPLICATION NUMBER: 60/225,214 FILING DATE: 2000-08-14 APPLICATION NUMBER: 60/249,218 FILING DATE: 2000-11-17 FILING DATE: 2000-08-14
APPLICATION NUMBER: 60/225,213 FILING DATE: 2000-08-14
APPLICATION NUMBER: 60/235,836 APPLICATION NUMBER: 60/249,208 FILING DATE: 2000-11-17 APPLICATION NUMBER: 60/249,245 FILING DATE: 2000-11-17 APPLICATION NUMBER: 60/225,759 APPLICATION NUMBER: 60/249,244 FILING DATE: 2000-11-17 PRIOR

729 TGAGGCCATCTCGCTGGTACGTGAGGTGACGTGTGAATGTGAACATGCGCGTGGGCAT 788 61 CCKGGCCATCAGGAAACTGCGGGCACTGCCGTGGACATCAACATGCGTGTGGGGCGT 120 669 GCTGCCGGAGGCCCGACCATGCCCACTGCTGTGGAATGGGGGTAGACATGAT 728 789 CCACAGGGGGGGGGGGGGGGGGGGGGGTTGGGGAAATGGCAGTTCGATGTGTG 848 849 GTCCAATGATGTGACCCTGGCCAACCATGGAAGCCGGGAGCTGGCGCTGCCA 908 Length 330 CATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGA 956 241 CATCACAGGGGCTACCCTGCTGCTGCANGGGCTTATGCTGNGGA 288 Indels 6.9%; Score 124.4; DB 9; 64.2%; Pred. No. 5.3e-24; tive 0; Mismatches 103; PRIOR FILING DATE: 2000-11-17
PRIOR APPLICATION NUMBER: 60/249,217
PRIOR PAPLICATION NUMBER: 60/249,211
PRIOR PAPLICATION NUMBER: 60/249,211
PRIOR PILING DATE: 2000-11-17
PRIOR PELING DATE: 2000-11-17
PRIOR PELING DATE: 2000-11-17
PRIOR PILING DATE: 2000-11-17
PRIOR PELING DATE: 2000-09-08
PRIOR PELING DATE: 2000-09-14
PRIOR PELING DATE: 2000-10-20
PRIOR PELING DATE: 2000-10-20
PRIOR PELING DATE: 2000-10-20
PRIOR PELING DATE: 2000-11-08
PRIOR PELING DATE: 2000-11-08
PRIOR PELING DATE: 2000-10-20
PRIOR PELING DATE: 2000-11-08
PRIOR PELING DATE: 2000-11-09
PRIOR PELING DATE: 2000-11-09
PRIOR PELING DATE: 2000-11-09 Best Local Similarity 64.2 Matches 185; Conservative Query Match ò g g ŏ g ōλ g g οy

ö

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   789 CCACAGCGGCGCGCGTGCACTGCGGCGTTGGCTTGCGGAAATGGCAGTTCGATGTGTG 848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCCAATGATGTGACCCTGGCCAACCACGATGGAAGCAGGAAGCCGGGCTGGCCGCATCCA 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        669 GCTGCCGGAGGCCCGGGCCCACCATGCCCACTGTGGAGATGGGGGGTAGACATGAT 728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 445, Application US/09764869
Patent No. US20020061521A1
GENERAL INFORMATION:
APPLICANT: Rosen et al.
TITLE OF INVENTION: NUMBER: US/09/764,869
CURRENT PELLING DATE: 2001-01-17
Prior application data removed - refer to PALM or file wrapper; NUMBER OF SEQ ID NOS: 2442
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 445
LENGTH: 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 10; Length 330;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1351, Application US/09764868
Fatent No. US20020168711A1
GENERAL INFORMATION:
FAPPLICANT: ROSen et al.
TITLE OF INVERTION:
FILE REFERENCE: PT232
CURRENT FILING DATE: 2001-01-17
CURRENT PILING DATE: 2001-01-17
FILE OF INVERTION NUMBER: US/09/764,868
CURRENT FILING DATE: 2001-01-17
FILE APPLICATION NUMBER: PAGE ID NOS: 1510
SOFTWARE: PAGE ID NOS: 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 CATCACAGGGCTACCCTGCTGCTGCCANGGCTTATGCTGNGGA 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              909 CATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGA 956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 6.9%; Score 124.4; DB 10; Length Best Local Similarity 64.2%; Pred. No. 5.3e-24; Matches 185; Conservative 0; Mismatches 103; Indels
                                                                                                                                                                                                                                                                                                                                                          LOCATION: (272)
COTHER INFORMATION: n equals a,t,g, or c
NAME/KEY: SITE
LOCATION: (285)
COTHER INFORMATION: n equals a,t,g, or c
NAME/KEY: SITE
COTHER INFORMATION: n equals a,t,g, or c
US-09-764-869-445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 15
US-09-764-868-1351
                                                                                                                                                                                                                                                                                                                                          NAME/KEY: SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 11881
US-09-764-869-445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO 1351
                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
```

```
1;
                                                                                                                        | TGGCCAACCACATGGAAGCAGGAAGCGGGGTGGCG-CATCCACTCACTCGGGCAACA 924
                                                Gaps
                                                                        746 TACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTGC
                      Length 11881;
                       4.4%; Score 79.2; DB 9;
63.4%; Pred. No. 5.2e-11;
tive 0; Mismatches 78;
                                                                                                                                                                                                                                         925 CTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCA 960
                                                                                                                                                                                                                                                                                          Search completed: March 1, 2003, 09:04:11
Job time : 106.396 secs
                                                Conservative
                                  Best_Local Similarity
Matches 137; Conserv
US-09-764-868-1351
                          Query Match
                                                                                                                          δ
                                                                                                                                                  ద
                                                                                                                                                                           δý
                                                                                                                                                                                               q
                                                                                                                                                                                                                            δy
```



1123, App 176, App 176, App 176, App 176, App 173, App 173, App 173, App 173, App 173, App 173, App 174, App 17, App 17, App 11, App 1

Sedineuce

```
APPLICANT: Insel, Paul A.
APPLICANT: Ping, Peleei
APPLICANT: Post, Steven R.
APPLICANT: Gao, Meihua
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE
TITLE OF INVENTION: HEART FAILURE
NUMBER OF SEQUENCES: 9
           US-08-997-080-176
US-08-997-362-176
US-09-324-542-176
US-09-324-542-176
US-09-997-362-173
US-08-997-362-173
US-08-997-362-173
US-08-997-362-173
US-09-205-426-173
US-09-205-426-173
US-09-205-995-72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/008,097
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37,612
arr: 22000-20567.21
                                                                                                                                                                                                                                                                                                                       ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON & FOERSTER
STREET: 755 PAGE MILL ROAD
CITY: PALO ALTO
                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/09008097 Patent No. 6306830 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 22
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-491-5600
TELEFAX: 650-494-0792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: DYLAN, TYLER M
REGISTRATION NUMBER: 37,61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: Coding Sequence LOCATION: 1...1812 OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Hammond, H. Kirk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1812 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 650-494-0792
TELEX: 706141
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1812 base pair:
nucleic acid
EDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: CA
COUNTRY: USA
ZIP: 94304-1018
 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                      RESULT 1
US-09-008-097-3
 44444444444688477777777
 604
Sequence 1, Appli
Sequence 11, Appl
Sequence 1, Appli
Sequence 9, Appli
Sequence 1, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , Appl
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appl
Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appli
Appli
Appli
Appli
Appli
Appli
Appli
                                                                                                                             (without alignments)
12520.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                         February 28, 2003, 22:03:11; Search time 44.382 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1,
Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence Sequence Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1
Sequence 1
Sequence 1
                                                                                                                                                                       US-09-750-240-3
1812
1 gttaacgtggtgctgggcat.....gcagctttcctgaggtgttc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
5: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
               GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-997-080-123
US-08-997-362-123
US-09-095-855-123
US-09-324-542-123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-474-076-1
US-07-793-961A-1
US-08-240-357-1
US-08-726-214-11
US-09-473-16-1
US-08-726-214-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-726-214-1
US-08-726-214-1
US-08-726-214-15
US-08-726-214-15
US-08-726-214-13
US-08-307-89-5
US-08-307-89-5
                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US95-11808-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-412-210-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-726-214-7
US-08-894-173-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          us-09-398-193-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-008-097-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-473-717-1
                                                                                                                                                                                                                                                                                     441362 seqs, 153338381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                             - nucleic search, using sw model
                                                                                                                                                                                                                                       IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1808.4
1763
1519.8
1437.2
858.5
858.5
834.3
335.6
311.2
286
286
286
                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          256.2
216.8
216.8
209.4
207.8
73
                                                                             OM nucleic
                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Result
```

Mon

g

ò

g

à

g

Ôχ

q

δ

a

δ

a

δ

g

ò

g

ŏ

g

ö

g

g ò g ò Q

ò

g

ò

g

ò g οy qq

ò

οŽ

```
ADDRESSEE:
        1021
                                                      1081
                                                                    1141
                                                                                    1141
                                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                       1561
                                                                                                                                                                                                                                                                                                     1561
                                                                                                                                                                                                                                                                                                                                                                                1741
                                                                                                                                                                                                                                                                                                                                                                                                1741
                                      1081
                                                                                                  1201
                                                                                                                  1201
                                                                                                                                 1261
                                                                                                                                                1261
                                                                                                                                                               1321
                                                                                                                                                                              1321
                                                                                                                                                                                             1381
                                                                                                                                                                                                            1381
                                                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                    1621
                                                                                                                                                                                                                                                                                                                                   1621
                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                                                                                                                                                               1801
                                                                                                                                                                                                                                                                                                                                                                                                                1801
        à
                    Q
                                      ò
                                                   D
                                                                   ά
                                                                                 g
                                                                                                  δý
                                                                                                               g
                                                                                                                                οy
                                                                                                                                             g
                                                                                                                                                              δŽ
                                                                                                                                                                           a
                                                                                                                                                                                            δý
                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                              Dρ
                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                              9
                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                              480
                                                                           CCGCGCAGCCCCTCTGCGGGCCTCTGGTGCTTCTTTGTATACATCGCATACACG 120
                                                                                                          180
                                                                                                                        180
                                                                                                                                         240
                                                                                                                                                       240
                                                                                                                                                                       300
                                                                                                                                                                                     300
                                                                                                                                                                                                     360
                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                          900
                                                                                                                                                                                                                                                                                                                                                          099
                                                                                                                                                                                                                                                                                                                                                                        999
                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                       780
                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
                               Gaps
                                                            09
                                              9
                                            GTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCCTGGGCCTCCCACCTTGCAT
                                                                                                                                       TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCC
                                                                                                                                                                      AATGTGCTGCTGCTCCTCTGCACCAACGTCATTAGCATCTGCACACTATCCAGCAGAG
                                                                                                                                                                                                    GTGTCTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCCGGCTCCACCTG
                                                                                                                                                                                                                                CAGCATGAGAATCGGCAGCAGCAGCGCTGCTGCTCGGTATTGCCCCAGCACGTTGCC
                                                                                                                                                                                                                                                               ATGGAGATGAAAGACATCAACACAAAAAAAAAGAAGACATGTTCCAACAAGATCTACATA
                                                                                                                                                                                                                                                                                             CAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCA
                                                                                                                                                                                                                                                                                                                           TCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGAC
                                                                                                                                                                                                                                                                                                                                  GGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATC
                                                                                                                                                                                                                                                CAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                      GACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGTGTGAATGTGAACATGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GIGGGCATCCACAGCGGCGCGCGTGCACTGCGTCCTTGGCTTGCGGAAATGGCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCA
                              ö
                 1812;
                 Length
                               Indels
                 4;
                              ö
                DB
              Score 1812;
Pred. No. 0;
; Mismatches
                              ö
              100.0%;
larity 100.0%;
Conservative 0
                      Best Local Similarity
Matches 1812; Conser
US-09-008-097-3
               Query Match
                                                                                                                                                                                    241
                                                                          61
                                                                                          61
                                                                                                         121
                                                                                                                        121
                                                                                                                                       181
                                                                                                                                                      181
                                                                                                                                                                     241
                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
```

```
1140
                                                                                                                                                        1200
                                                                                                                                                                                     1260
                                                                                                                                                                                                                    1260
                                                                                                                                                                                                                                                   1320
                                                                                                                                                                                                                                                                                                                1380
                                                                                                                                                                                                                                                                                                                                             1380
                                                                                                                                                                                                                                                                                                                                                                            1440
                                                                                                                                                                                                                                                                                                                                                                                                          1440
                                                                                                                                                                                                                                                                                                                                                                                                                                         1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1680
                                                                                                                         ACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1800
                CTGGGCGCCAGCCAGAAACGGAAAGAGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACT
                                                                                                                                           CACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGG
                                                                                                                                                                                       GGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATC
                                                                                                                                                                                                                                                                                                                 CAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTAC
                                                                                                                                                                                                                                                                                                                                                                            GTTGCCTGTGCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONGESTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: GENE THERAPY INTILE OF INVENTION: HEART FAILURE NUMBER OF SEQUENCES: CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MORRISON & FOERSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 2
US-09-008-097-5
Sequence 5, Application US/09008097
Patent No. 6306830
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Hammond, H. Kirk
APPLICANT: Insel, Paul A.
APPLICANT: Ping, Peipei
APPLICANT: Post, Steven R.
APPLICANT: Gao, Meihua
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTGAGGTGTTC
```

```
1296 GTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGA 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1563 CAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGT 1622
                                                                   1476 TGTGTGGTCCAATGATGTGACCCTGGCCAACCATGGAAGCAGGAAGCCGGGCTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1143 CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1776 CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATGATTCAGCAAAGACAACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCCTGTGCCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2016 FGCCTGTGCCCTGTTGGTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATC
                                                                                                                                                                  GTCAGGGCTGCCGGAGGCCCGGCCGACCATGCCCACTGCTGTGGAATGGGGGTAGA
                                                                                                                                                                                                                          CATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGT
                                                                                                                                                                                                                                                   1356 CATGATTGAGGCCATCTCGCTGGTACGTGACGTGACAGGTGTGAATGTGAACATGCGCGT
                                                                                                                                                                                                                                                                               GGGCATCCACAGGGGGGGGGGTGCACTGCGGCGTCCTTGGCGAAATGGCAGTTCGA
                                                                                                                                                                                                                                                                                                                                     TGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCG
                                                                                                                                                                                                                                                                                                                                                                                           903 CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTTGAGACTTTCCTCATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1023 GGGCGCCAGCAGAAACGGAAAGAGAGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTTGCTCACCTTCCA
                                                        CCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAA
                                                                                                                                                                                                                                      1956 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1443
                           1116
                                                                                 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1503
  483
                                                      543
                                                                                                                                                                                                                                                                                                                                      843
                                                                                                                                                                                                                                                                                                                                                                                                                                                  963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ġ.
                           a
                                                      Q
                                                                            셤
                                                                                                           δ
                                                                                                                                    qq
                                                                                                                                                                   ò
                                                                                                                                                                                      g
                                                                                                                                                                                                                      ολ
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΟŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCATGAGAATCGGCAGCAGCAGCGGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT 1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCATGAGAATCGCCAGCAGGAGCGCTGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCAT 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGT 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTGTATACATCGCATACACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                             SYSTEM: DOS '
FastSEQ for Windows Version 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1808.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                37,612
SR: 22000-20567.21
                                                                                                                                                     US/09/008,097
                                                                                                                                                                                                                                                NAME: Dylan, Tyler M
REGISTRATION NUMBER: 37,612
REFERENCE/DOCKET NUMBER: 220C
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-813-5600
TELEFAX: 650-494-0792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99.8%;
99.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: Coding Sequence LOCATION: 1...3501
OTHER INFORMATION:
                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 3549 base pairs
                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
755 PAGE MILL
                                                                                                                                       CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single
                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                 APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
              PALO ALTO
                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                     TELEFAX: 650-4
TELEX: 706141
                                         USA
                                                                                                                        SOFTWARE:
                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
US-09-008-097-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Sin
Matches 1809;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           363
```

g ŏ qq Qγ QQ δy qq ΩŽ q ò g δ qq

õ

g

οy

1082

1775 1202

1475

902

```
662
 305
                                                                                                         482
              dd
                                                                                                                                                         g
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                       g
                                   QY
Db
                                                                 ΟŊ
                                                                                  g
                                                                                                        ογ
                                                                                                                     g
                                                                                                                                       οy
                                                                                                                                                                             δý
                                                                                                                                                                                          g
                                                                                                                                                                                                               δý
                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                               δŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ä
                                                                              2375
                                                                                                                 2435
                                                            TTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCC 1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                          HUMAN ADENYLYL
2196 CAGCATTGTCGCCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGT
                                   2376 TTACTCTCGGGCCTGGATGCTCCCCTGTGTGGGGCACCATGCCCACCTGCAGCTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 4942;
                                                                                                                                                                                                                   APPLICANT: TONITION, James E.
APPLICANT: TON Therapeutics, Inc.
TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF A HUMA;
TITLE OF INVENTION: CLOLASE
FILE REFERENCE: 44481-5028-01-US
CURRENT PEPLICATION NUMBER: US/09/474,076
CURRENT FILING DATE: 1999-10-12
PRIOR APPLICATION NUMBER: PCT/US98/13694
PRIOR FILING DATE: 1999-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR APPLICATION NUMBER: 08/886,550
PRIOR FILING DATE: 1997-07-01
PRIOR APPLICATION NUMBER: 08/886,550
PRIOR FILING DATE: 1997-07-01
SEQUID NOS: 2
SOFTWARE: PATENTIN VOIL 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                      97.3%; Score 1763; Dilarity 98.7%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                   cyclase
                                                                                                                                                                                             Sequence 1, Application US/09474076 Patent No. 6465237 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                   adenylyl
                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA ORGANISM: human type VI
                                                                                                                                                                                                                                                                                                                                                                                                   ; NAME/KEY: CDS
; LOCATION: (145)..(3648)
US-09-474-076-1
                                                                                                                                          2436 TGAGGTGTCC 2445
                                                                                                                                  TGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
Matches 1788; Conserv
                                                                                                                                                                                                                                                                                                                                                                 4942
                                                                                                                                                                            ULT 3
09-474-076-1
                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                            FEATURE
                                                                                             1743 '
                                          2256
                                                           1683
                                                                            2316
                                                                                                                                 1803
                          1623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1022
                                                                        g
                                                                                                           QQ
        셤
                         ò
                                        g
                                                      ò
                                                                                             ò
                                                                                                                                ò
                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
```

```
1321
                                                                                                                                                                                                                                                                   1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1202 GCACCCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2101
                                                                                                                                                      1742 GCCGTGGTGGCGCAGCGCACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1142 CCAAGGACTCCAAGGCCTTCCGCCAGATGGCCATTGATGATTCCAGCAAAGACAACCGGG 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1262 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1382 TIGCCTGTGCCCTGTTGGTTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCAC 1441
                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                 424
                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                                                                                                                                                                                       425 AGATGAAAGAAGACATCAACACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          722 ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             782 TGGGCATCCACAGGGGGGGGGGGTGCACTGGGGCGTTGGCGTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1162 TGGGCATCCACAGGGGGGGGGGGGGGGGGGGGGGGCGTGCCTTGGCTTGCGGAAATGGCAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1022 TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGGGGGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                 365 ATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGCTTTGCCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                    TGTCAGGGCTGCCGGAGCCCGGGCCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                      AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1082 GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

<u>``</u>

```
482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       662
                                                                                                                                                                                                                                                                                                                                                                                                                              425
                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                              ò
                                                                                                                                 g
                                                                                                                                                       ŏ
                                                                                                                                                                           a
                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                          ÓΣ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                        2461
                                                                                                                                                                  TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG 1681
                                                                                                                                                                                                              2162 FIGCCTGTGGCCTGTTGGCTTCTGGCTTCATCTGCTTCATCCAGCTTCTCATCTTCCCAC
                                             2402 TGTTTACTTCTGCCATTGCCAATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                                                                                          TGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCCTGCAACGTCTGTCCC
                                                                                                                        GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Yoshihiro Ishikawa
TITLE OF INVENTION: Cloning and Character-
TITLE OF INVENTION: ization of a Cardiac Adenylyl Cyclase
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Alan M. Gordon
ADDRESSEE: American Cyanamid Company
STREET: 1937 West Main Street,
STREET: P.O. Box 60
CITY: Stamford
STATE: Connecticut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/07/793,961A
                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/07793961A Patent No. 5334521 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGIH: 4046 base pairs listed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 31
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203 321 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: MS-DOS
SOFTWARE: ASCII from DW4
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 19311118
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US
FILING DATE: 19911118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Gordon, Alan M. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 203 321 2971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: Connecticut
COUNTRY: USA
                                                                                                                                                                                                                                                                                                     CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                           2582 CTGAGTACTTC 2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 06904
                                                                                                                                                                                                                                                                                                                                                                       US-07-793-961A-1
                                                                                                                                            2342
                                                                                                                                                                  1622
                                 1442
                                                       2222
                                                                            1502
                                                                                                  2282
                                                                                                                        1562
                                                                                                                                                                                                              1682
                                                                                                                                                                                                                                                                                                    1802
                                                                                                                                                                                                                                                                                                                                                          RESULT
                                 δŻ
                                                     qq
                                                                                            Q
                                                                                                                      δ
                                                                                                                                        qq
                                                                                                                                                            Ω
                                                                                                                                                                                      g
                                                                                                                                                                                                             δý
                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                        Pp
                                                                       οy
```

```
1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1482 ACATGATCGAGGCCATCTCGCTGGTGGTGAGGTGACAGGTGTGAACGTGAACATCCGGG 1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                          941
                                                                                                                                                                                                                                                                                                                                                                                           185 TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG 244
                                                                                                                                                                                                                                                                                  881
                                                                                                                                                                                                                                                                                                                    125 TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGA 184
                                                                                                                                                                                                           821
                                                                                                                                                                                                                                               GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATGCATACACGCTCC 124
                                                                                                                                        Gaps
                                                                                                                                                                        64
                                                                                                                                                                                            1002 IGCTGCTGTTCCTCTGCACCAACGTCATTGGCATCTGCACCACACTACCCAGCTGAGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            245 TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305 CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               365 ATGAGAATCGGCAGCAGGAGCGGCTGCTGTTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATGAAAGAAGACATCAACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            542 CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               902 GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                            5 ACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                   Length 4046;
                                                                                                 Score 1519.8; DB 1; Length
Pred. No. 0;
0; Mismatches 162; Indels
                               TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                     83.9%;
90.7%;
                                                                                                                     Best_Local Similarity 90.7
Matches 1643; Conservative
                single
              STRANDEDNESS:
; TYPE: NUCI
; STRANDEDNE;
; TOPOLOGY:
; MOLECULE TYP!
US-07-793-961A-1
                                                                                                      Query Match
```

ø

```
65
                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                             δý
                                                                                                                                                                                                                                                                                                                                                                                         ά
                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
2138
                                                                                                                                                                                                                                                                                                                 2378
                                                                                                                                                                                                                                                                                                                                                                                                ATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTC 1801
                                                                                                                                                                                                                                                                     GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                         AGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                      TGGGCGCCAGCAGAAACGGAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC
                                                                                        CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG
                                                                                                                     GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                                 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                                                         ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                 GCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTG
                                                                                                                                                                                                                                                                                                                               TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     oŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/08240357
Patent No. 5578481
GENERAL INFORMATION:
APPLICANT: Ishikawa, Yoshihiro
TITLE OF INVENTION:
CONTRESPONDENCE:
CORRESPONDENCES:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                American Cyanamid Company
                                                                                                                                                                                                                                                                                                                                                                                                                      CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGAGTACTTC 2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-240-357-1
                                                                                                                                                                                                                                                                                                                                                                                        1742
              1719
                             1022
                                            1779
                                                          1082
                                                                        1839
                                                                                       1142
                                                                                                     1899
                                                                                                                    1202
                                                                                                                                  1959
                                                                                                                                                 1262
                                                                                                                                                               2019
                                                                                                                                                                             1322
                                                                                                                                                                                           2079
                                                                                                                                                                                                           1382
                                                                                                                                                                                                                         2139
                                                                                                                                                                                                                                                      2199
                                                                                                                                                                                                                                                                     1502
                                                                                                                                                                                                                                                                                   2259
                                                                                                                                                                                                                                                                                                  1562
                                                                                                                                                                                                                                                                                                                2319
                                                                                                                                                                                                                                                                                                                                            2379
                                                                                                                                                                                                                                                                                                                                                           1682
                                                                                                                                                                                                                                                                                                                                                                         2439
                                                                                                                                                                                                                                                                                                                                                                                                      2499
                                                                                                                                                                                                                                                                                                                                                                                                                     1802
962
                                                                                                                                                                                                                                                                                                                               1622
                                                                                                                                                                                                                                                                                                                                                                                                                                    2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
              윤
ò
                             ò
                                        g
                                                         οy
                                                                       g
                                                                                    à
                                                                                                  a
                                                                                                                   ò
                                                                                                                              g
                                                                                                                                             ŏ
                                                                                                                                                            8
                                                                                                                                                                             õ
                                                                                                                                                                                        q
                                                                                                                                                                                                        ò
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                  q
```

```
942 TCTTGGCCTGGCAACTCAACGCGGTGACGCCTTCCTGGAAGCAGCTCGGTGCCAACA 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           425 AGATGAAAGAAGACATCAACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTTTTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            822 GCAGCCCCTCTGTGGGGCCTCTGGGTGCCTTTTTGTCTACATCACCTACACGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      125 TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           882 TACCCATCCGCATGCGGGCAGCTGTCTTCAGTGGCCTGGGCCTGTCCACCCTGCATTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185 TCTIGGCCIGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245 TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305 CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   365 ATGAGAATCGGCAGCAGCAGCGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 ACGTGGTGCTGGCCATCCTGGCGCCAGGTCGGGGGGGCGCTTTCGCAGCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                     COMPUTER READABLE FORM:
WEDLUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1519.8;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                             31,705-01
                                                                                                                                                                                                   APPLICATION NUMBER: US/08/240,357
FILING DATE: 10-MAY-1994
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                     NAME: Gordon, Alan M.
REGISTRATION NUMBER: 30,637
REFERNCE/DOCKET NUMBER: 31,7
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-831-3364
TELEPHONE: 201-831-3305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 201-831-3305
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 83.9%;
Best Local Similarity 90.7%;
Matches 1643; Conservative (
                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 4046 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                       CURRENT APPLICATION DATA:
One Cyanamid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131..3625
                                   New Jersey
                                                                       07470-8426
                                                     USA
                 Wayne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY:
; LOCATION:
US-08-240-357-1
               CITY: Way
STATE: Ne
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
```

ñ

```
ATTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTC 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGA 184
                                                    5 ACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTTTCGCAGCCCGC
                                 223; Indels
                                                                                                                                                                                                                     GENERAL INFORMATION:

APPLICANT: Tang, Wel-Jen
APPLICANT: Gliman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/726,214
FILING DATE: CONCULTENTLY HENEWITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1437.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:450
                                                                                                                                                                                                                                                                                                                                                 America
                                                                                                                                                                                                Sequence 11, Application US/08726214 Patent No. 6107076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: (512) 418-3000
TELEFAX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 11: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                               United States of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 4131 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 1584; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                   |||||| ||| CTGAGTACTTC 2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic acid
                                                                                                                       1802 CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                           Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                      Texas
                                                                                                                                                                                                                                                                                                                                        STALL.
COUNTRY: Uni
                                                                                                                                                                             RESULT 6
US-08-726-214-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-726-214-11
                                                                                                                                                                                                                                                                                                                         CITY: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
           2379
                                 1682
                                                                            1742
                                                                                                                                            2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            125
                                                    g
                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                δ
                                                                            à
                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                              1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1382 TIGCCIGIGCCCTGTIGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCAC 1441
                                                                                                                                                                                                                                                                                                                                                          TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 1081
                                                                                                                                                                                                                                                                                                                                                                                                     GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1442 ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTG 1621
                                                                                                  1622 TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG 1681
           TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                  GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                            AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                              GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1262 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                                                           1602
                                                                                                                                                                                                                                                                                                                                                         1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1502
                                           602
                                                                 1362
                                                                                                            1422
                                                                                                                                                     1482
                                                                                                                                                                                                                                                                                        1659
                                                                                                                                                                                                                                                                                                                                   1719
                                                                                                                                                                                                                                                                                                                                                                              1779
                                                                                                                                                                                                                                                                                                                                                                                                   1082
                                                                                                                                                                                                                                                                                                                                                                                                                         1839
                                                                                                                                                                                                                                                                                                                                                                                                                                               1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2319
                                                                                      662
                                                                                                                                 722
                                                                                                                                                                                                                                                                   902
                                                                                                                                                                                                                                                                                                              962
                   g
                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                            0.7
0.0
0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                         ŏ
                                                               g
                                                                                                       g
                                                                                                                               ŏ
                                                                                                                                                  g
                                                                                                                                                                        δ
                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۵y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                   δ
```

ij

Gaps 64

ä

Length 4131

1561

1501

1441

2246

```
Sequence 1, Application US/09473716

Patent No. 6436672

GENERAL INFRAMATION:
APPLICANT: Tomlinson, James
TITLE OF INVENTION: CYCLASE
TITLE OF INVENTION: CYCLASE
TITLE OF INVENTION: CYCLASE
TITLE OF INVENTION: CYCLASE
CURRENT ILING DATE: 1999-10-29
PRIOR PLICATION NUMBER: US/09/473,716
CURRENT FILING DATE: 1999-07-01
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1998-07-01
PRIOR PLICATION NUMBER: 60/070,901
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR PLICATION NUMBER: 08/086,362
PRIOR PLICATION NUMBER: 08/086,362
   1887 GTGCCCAAGATGCTCTGAACCCTGAGGATGAGGTGGACGAGTTTCTGGGGCCGAGCCATCG 1946
                                                                                                                                                                                                                                                                                                                                                                                        GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTG 1621
                                                                                                                                                                                                                                                                                                 TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG 1681
                                                                                                                                                                                                                                                                                                                                             AGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCCTTCGGAGCCTACG
                        TIGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCTACTTCTAATTTTCCCAC
                                                                                                                                                                         2067 ICGCCTGTGCCCTCCTGGTTTTCTGCTTCATCTGTTTCATCCAGTTCCTCGTATTCCCAC
                                                                                                                                                                                                                                                                   ACTCCACCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                          TGATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 4523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 895;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         adenylyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            49.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; NAME/KEY: CDS
; LOCATION: (139)..(3921)
US-09-473-716-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        type V
                                                                                                                                                                                                                                                                                                                                                                                                                                                   |||||| || 12487 CTGAGTACTT 2496
                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAGGTGTT 1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-473-716-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                  1382
                                                                                                                                                                                   2127
                                                                                            2007
                                                                                                                                                                                                          1502
                                                                                                                                                                                                                                2187
                                                                                                                                                                                                                                                     1562
                                                                                                                                                                                                                                                                           2247
                                                                                                                                                                                                                                                                                                                      2307
                                                                                                                                                                                                                                                                                                                                             1682
                                                                                                                                                                                                                                                                                                                                                                   2367
                                                                                                                                                                                                                                                                                                                                                                                                                                     1802
                                                                                                                                                                                                                                                                                                  1622
   පු
                        ò
                                            g
                                                                     δ
                                                                                       Ωp
                                                                                                                  οχ
                                                                                                                                      QQ
                                                                                                                                                              οy
                                                                                                                                                                               g
                                                                                                                                                                                                         ò
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                         òγ
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                      1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1886
                                                                                                                                                                                                                               1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGTGGTGGCAAGCCCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC 1021
                                                                                304
                                                                                                      986
                                                                                                                             364
                                                                                                                                                                        424
                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                   TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGGTAG 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                          CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
TTTTGGCCTGGCATCTCAACATGTGACCCTTCCTTTGGAAGCAGCTCGGTGCTAACG
                                                                                                                                                                                                                    AGATGAAAGAAGACATCAACACAAAAAAAGAAGAC---'ATGTTCCACAAGATCTACATAC
                                  TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                               TGCTGCTGCTCCTCTGCACCACGTCATTAGCATCTGCACCACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGGCATCCACAGCGGGGGGGGGTGCACTGGGGTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1467 TGGGCATCCACAGGGGGGGTGTACACTGCGGGTGTCCTTGGTCTTGCGAAATGGCAGTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCACCCAAGATGCCCTGAACCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCATCG
                                                                                                                                                                       ATGAGAATCGGCAGCAGCAGCGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                         CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                      AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1022 TGGGCGCCAGCCAGAAACGGAAAGAGAAAGGCATGCTGGCCAAGCTGCAGGGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1707 TAGGAGCCAGCCAGAAAGAGGAAAGAGGCCATGCTGGTCAAGCTGCAGCGGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAAACGGG
                                                        867
                                                                               245
                                                                                                                                                                                                                                                              482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1407
                                                                                                                                                                                                                                       1107
                                                                                                                                                                                                                                                                                  1167
                                                                                                                                                                                                                                                                                                         542
                                                                                                                                                                                                                                                                                                                                                                           1287
                                                                                                                                                                                                                                                                                                                                                                                                 662
           807
                                  185
                                                                                                                           305
                                                                                                                                                                       365
                                                                                                                                                                                                                   425
                                                                                                                                                                                                                                                                                                                               1227
                                                                                                                                                                                                                                                                                                                                                       602
                                                                                                                                                                                                                                                                                                                                                                                                                        1347
                                                                                                                                                                                                                                                                                                                                                                                                                                              722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1202
           셤
                                  ò
                                                      g
                                                                            Qγ
                                                                                                g
                                                                                                                          ò
                                                                                                                                           g
                                                                                                                                                                     õ
                                                                                                                                                                                          g
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                       Dp
                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

1309

1429

ò

οy

ò qq δý ò

ò

ò Ω å g δ Ωÿ g Qγ δ qq Óγ δ qq δ g D

δý

g

δ

ò

```
---AGGACAAGAACGCCCAGGAGAGTGCGAACCCTGAGGATGAAGTGGATGAGTTTTCTGG
                                                                                                                                                                                                              2480 CCATCGTGCCCCACTCCATATTCATGCTCAGCTTCTACCTGACCTGTTCCTGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                       2600 AGACCCTCTCCAGGAAGATCGTGCGTCCAAGATGAACAGCACCCTGGTTGGGGTGTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2660 CCATCACCCTGGTGTTCCTGGCGGCTTTTGTCAACATGTTCACGTGCAACTCCAGGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2066 TGCGCTGCACCCAGAAGCGGAAAGAAGAAGGCCATGATCGCCAAGATGAACCGCCAGA
                              GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCC----
                                                                                  ------CGACCAAGGACTCCACCAGATGGCCATTGATGATCCAGCA
                                                                                                                                                                                              GCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTT
                                                                                                                                                                                                                                                                                                           TCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTC
                                                                                                                                                                                                                                                                                                                             1430 TAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAGCAG-----CTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCCACA
                                               GAACCAACTCCATCGGGCACAACCCACACACTGGGGGCTGAGCGCCCTTCTACAACC
                                                                                                             2186 ACCTGGGTGGCAACCAGGTGTCCAAGGAGATGAAGCGGATGGGCTTTGAAGACCCCCA---
                                                                                                                                          AAGACAACCGGGGCACCCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGA
                                                                                                                                                                                                                                                       TGCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGGGCTGCTTGGCACAGGAGCACATCAGCGCGGGGCCAGGTCAACGCGTGTCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Tang, Wei-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCCCACCTGCAGCTTTCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2840 GGCCCAACTGCAACTTCCCCGAGTACTTC 2868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-726-214-9
; Sequence 9, Application US/08726214
; Patent No. 6107076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arnold, White
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P.0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: Texas
COUNTRY: Unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY:
                                                                                                                                                                                                                          2300 (
                                                                                                                                                                                                                                                     1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2780
                                                                                                                                                                    2243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1784
                                                                                                                                                                                               1250
                                                                                                                                                                                                                                                                                 2360
                                                                                                                                                                                                                                                                                                             1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1730
                              1082
                                                                                    1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                           δý
                                                    g
                                                                                  φ
                                                                                                        g
                                                                                                                                       οy
                                                                                                                                                                 g
                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                       δŽ
                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1585
                                                                                                                          GCAGCGCCTCTGAGGGCATCTGGTGGACCGTGTTCTTCATCTACACCATCTACACGCTGC 1165
                                                                                                                                                                    1405
                                                                                                                                                                                                                                                                                                                                                                                            GCTGTGGGGGGGGACGCCAACGCCTACCTCAAGGAGCACAGTATCGAGACCTTCCTCATCC 2065
                                                                    1046 ATGCGCTCATCGCCGTGGTGCTGGCCGTCCAGGTGGTGGCCCTGCTGCTGCCGCAGCCAC 1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCATCC 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 1081
                                                                                                                                                                                                                                                                                                                                                                               424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                              GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTTTTTTTTTACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                  304
                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                 Gaps
                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                     TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTTGA
                                                                                                                                                                                                           TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                  TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                        CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                        ATGAGAATCGGCAGCAGCAGCAGCTGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATGAAAGAAGACATCAACACAAAAAAAAGAAGA----CATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTGGGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGGCATCCACAGCGGGGGGGGGTGCACTGCGGCGTCCTTGGGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGTCTGGTCTAACGATGTCACGCTAGCCAACCACATGGAGGCTGGCGGCAAGGCAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
               27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
Pred. No. 2.4e-229;
); Mismatches 525;
               ö
 69.88;
              Matches 1277; Conservative
  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                              365
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1886
                                          2
                                                                                                                                                                                                                                     1226
                                                                                                                                                                                                                                                                                             1286
                                                                                                                                                                                                                                                                                                                                                  1346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1826
                                                                                                                          1106
                                                                                                                                                    125
                                                                                                                                                                               1166
                                                                                                                                                                                                           185
                                                                                                                                                                                                                                                                                                                        305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  842
                                                                                              65
                                                                                                                                                                                                                                                                  245
                                                                                                                                                                                                                                                                                                                                                                                                                                    425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               962
                                                                 g
                                                                                                                    qq
                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
```

2779

```
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                        421 ATGCGCTCATTGCAGTGGTGCTGGCCGTCCAGGTAGTGGGCCTGTTGCTGCCACAGCCAC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCCCACCTTGCATTTGA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATGAAAGAAGACATCAACAAAAAAAAAGAAGA---CATGTTCCACAAGATCTACATAC 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                185 TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGAGAACCAGCAACAGGAGCGTCTCCTGCTGTCCTTCCCCGTCATGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365 ATGAGAATCGGCAGCAGGAGGGGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                       27;
                                                                                                                                                                                                                                                                                                                                 Length 3924;
                                                                                                                                                                                                                                                                                                                                                        Indels
                                     #1.30
                                                                                                                                                                                                                                                                                                                               ; DB 3;
..5e-219;
                                                                                                                                                                                                                                                                                                                                                        548;
                       iYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version
                                                                                                                                                                                                                                                                                                                               Score 858.2;
Pred. No. 1.5e
0; Mismatches
                                                                                                                                               NAME: Highlander, Stewen L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: 0TSD:450
TELEPHONE: (512) 418-3000
TELEPHONE: (512) 474-757
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
                                                           APPLICATION NUMBER: US/08/726,214 FILING DATE: Concurrently Herewith
                                                                                  CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
         COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-
SOFTWARE: PatentIn Release #
                                                                                                                                                                                                                                                                                                                               47.48;
Floppy disk
                                                                                                                                                                                                                                                    LENGTH: 3924 base pairs
                                               CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 68.69
Matches 1254; Conservative
                                                                                                                                                                                                                                                                 TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                     -08-726-214-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                125 '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                               Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1021
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
```

```
1200
                                                                                                                       1260
                                                                                                                                                                       1320
                                                                                                                                                                                                                                                                       1440
                                                                                                                                                                                                                                                                                                                                                1137
                                                                                                                                                                                                                                                                                                                                                                        1560
                                                                                                                                                                                                                                                                                                                                                                                                1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1729
                                                                                                                                                                                                            GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCATCC 1021
                                                                                                                                                                                                                                                                                                             AAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGA 1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---AGGACAAGAATGCCCAGGAAAGTGCCAACCCTGAGGATGAAGTGGACGAGTTTCTGG 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1675 GTCGAGCCATCGATGCCAGGAGTATTGACAGACTGCGATCCGAACACGTCCGAAAGTTCC 1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1370 TCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTC 1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1915 CCTTGGTGGTGTTTATATCTGTGATCTACGCCTGTGTGAAGCTCTTCCCTACTCCCCTGC 1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2154
                                                                                                                                                                                                                                                                                               TGGGCGCCAGCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1795 Tregrecorarcrecordrecordecordering 1854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1975 AGACACTCTCCAGGAAGATAGTGCGATCCAAGAAGAACAGCACCCTGGTCGGGGTGTTCA 2034
                                                                                              841
                                                                                                                                                901
                                                                                                                                                                                                961
721
                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
             GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCC----
                                                                                                                                                                                                                                                                                                                                                                                                -----CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1310 TGCTCACCTTCCAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1430 TAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1490 TAATCACCGTGCTGATCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1550 AACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1610 CCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                TGGGCATCCACAGGGGGGGGGGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                 GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                               1022
                                                                                                                                                                                                                                                                                                                                                1082
                                              722
                                                                                              782
                                                                                                                                                                      1261
                                                                                                                                                                                                                                                                                                                                                                                                1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1250
662
                                                                                                                       1201
                                                                                                                                                                                                                                                                       1381
                                                                                                                                                842
                                                                                                                                                                                                                                                962
                                                                                                                                                                                                902
                      g
                                                                                                                     g
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
ð
                                                ö
                                                                    g
                                                                                             Óγ
                                                                                                                                                οy
                                                                                                                                                                  g
                                                                                                                                                                                             δ
                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
```

```
1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1285 TTGAACATGCGTGGGGCTGCACCGGCAGGGTCCTCTGCGGGGTCCTGGGGCTGCGT 1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     949 GAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAG 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1165 TGCTACTACTGCGTGTCTGGCCTCACTCAGCCCAAGACTGACCACGCCCACTGCTGTGTG 1224
                                                                                                                                            468
                                                                                                                                                                                                                                       GAGATGGGGGTAGACATGATTGAGGCCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           289 TATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGGCAGTTACATCCAGGCC
                                                                      349 CGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCC
                                                                                          529 ACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              769 GTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  829 AAATGGCAGTTCGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         889 AGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTAC
                                    805 ATCCTGGCTGAGCGCGCCCAGAGGAAGGCCTTCCTGCAGGCCCGGAACTGCATTGAGGAC
                                                                                                                                            469 AAGATCTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTC
                                                                                                                                                                                                                                                                                                                                                             589 GCCCGGTTTGACAAGCTGGGTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCAGTGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Tang, Wei-Jen
APPLICANT: Gliman, Alfred G.
TILLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     White & Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 17, Application US/08726214
Patent No. 6107076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1009 ACTITCCTCATCCTGGGCGC 1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCTTTTTATTGTGCCCTC 1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: United States of ZIP: 77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: P.O. Box 4433
CITY: Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS: ADDRESSE: Arnold, W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-726-214-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1525
                                 g
                                                                        δ
                                                                                                       g
                                                                                                                                        οy
                                                                                                                                                                            g
                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                      gg
                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ÷
1730 TGCAGCAG-----CTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCA 1783
                    172 ACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGTGGTGA----TGCCTTCCTCTGGAAG 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCGCACTTGCTGGTCACGCTACGTTGGTCCCCGCCAAGCGCCCACGTCTCTGGAGA 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           112 GCATACACGCTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCC 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            565 GCAGCGGTGCCGGCCACAGCCGATCAGGGAGTCTGGCAGCTCCTTTTGGTCACCTTCGTG 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 330; Indels
                                                                                                                                                                                                                                                APPLICANT: Tang, Wei-Jen
APPLICANT: Gilman, Alfred G.
AITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/726,214
FILING DATE: CONCULTENTLY Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 436; DB 3;
Pred. No. 1e-106;
                                                                                          2215 AGTCCAACTGCAACTTCCCAGAGTACTTC 2243
                                                                    1784 TGCCCACCTGCAGCTTTCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-007-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Highlander, Steven L. REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:450
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433 CITY: Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                 United States of America
                                                                                                                                                                                              Sequence 1, Application US/08726214 Patent No. 6107076 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24.1%;
66.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (512) 418-3000
TELEFAX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 3978 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 647; Conservative
                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sest Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                     Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                  77210
                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                             RESULT 9
US-08-726-214-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-726-214-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            229
 à
                                 g
                                                                    ò
                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
1090 ATGTCCTACTACATGGCAGACCGTAAGCACCGAAAGGCCTTCCTGGAGGCCCGCCAGTCG 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       448 AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTG 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220 CTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          280 TGCACACATATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340 ATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGCAGCGGCTGCTGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 4533;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches 294; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                        MAMMALIAN ADENYLYL CYCLASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/726,214
FILING DATE: Concurrently Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 6e-80;
                                                                                                                                                                                                      RESULT 11
US-08-726-214-5
Sequence 5, Application US/08726214
patent No. 6107076
GENERAL INFORMATION:
APPLICANT: Tang, Wei-Jen
APPLICANT: Gliman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 335.6;
Pred. No. 7.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RY: United States of America 77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: UTSD:450 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Highlander, Steven L. REGISTRATION NUMBER: 37,642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (512) 418-3000
TELEFAX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18.5%;
63.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 4533 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 534; Conservative
                                                                                                                                          727 TTTATTGTGCCCTC 740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                    1015 CTCATCCTGGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-726-214-5
                           q
                                                                                    ŏ
                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    955 GAGCCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTC 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTGCCATGGAGATGAAGAAGACATCAACAAAAAAAAAGAGACATGTTCCACAAGATC 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               295 GCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTC 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CACCTGCAGCATGAGAATCGGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCAGCAC 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACTGTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATG 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGGTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAAC 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGGCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTG 954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTGGGAAGGTTCACATCACAAGACCACCTGGCGTGCCTGAATGGTGACTATGAGGTG 666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7 GCTGAGCGCCCCAGAGGAAGGCCTTCCTGCAGGGCCCGGAACTGCATTGAGGACCGCTG 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                535 CTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                775 ATGCGCGTGGGCATCCACAGCGGGGGGGGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTTCGATGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITGACAAGCTGCCGCAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1652;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                     PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 393.2; DB 3
Pred. No. 1.9e-95;
                                                                                                                           CLASSIFICATION: 435
PRIOR APPLICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REGISTRATION NUMBER: UYED:450
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION INFORMATI
                                                                           APPLICATION NUMBER: US/08/726,214 FILING DATE: Concurrently Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21.7%;
71.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid
STRANDEDNESS: single
                                                CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 71.0
Matches 521; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209
```

ò g ð g ò g ò 8 à g ò q ò a ò 8 à 8 à g ò

1,

ò

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                     TTTGCAGATATTGTGGGCTTTACCCCAGCTGTCCTCTGCTTGCAGTGCCCAGGAGCTCGTG 1389
                                                                                                                                                                    TGCGGCGTCCTTGCCTTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGACCCTG 867
                                                                                                                                                                                               GACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGCCCATCTCGCTGGTA 747
                                                                                                                                                                                                                                                 CGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACACAGCGGCGCGTGCAC 807
                                                                                         ATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGGCTGCGGAGAATCACTGCCTG
                                                                                                                                           AGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGGGGCC
                                                                                                                                                                                                                                                                                                                                                        GCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTG
                                      TTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                          CAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Tang, Wel-Jen
APPLICANT: Tang, Wel-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/08/726,214
FILING DATE: Concurrently Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: UTSD:450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: United States of America ZIP: 77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 15, Application US/08726214
; Patent No. 6107076
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37,642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Highlander, Steven L. REGISTRATION NUMBER: 37,642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
US-08-726-214-15
                                                                                                                                                                                                                       1510
                                                                                                                                                                                                                                                                          1570
                                                                                                                                                                                                                                                                                                     808
                                                                                                                                                                                                                                                                                                                                                                                                                                                             988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1810
                                                                                                                                                                    1450
                                                                                                                                           628
                                                                                                                                                                                             688
                                                                                                                                                                                                                                                 748
                                                                                                             q
                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                     ò
                                                                                       ò
                                                                                                                                           ò
                                                                                                                                                                    9
                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
```

```
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1575 GGCATAGGCTACGTGCTTTTTACACTCTTCGCCACCTACAGCATGCTTCCGCTGCCTCT 1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1695 ATACCCAGACTAGCGGTCTTTTCCATCAACCAGGTCCTGGCCCAGGTGGTGGTCTTCATG 1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1815 TTCCTGGAGACCCGGAGGTGTGTGGAGGCCAGGCTCGGCCTGGAGACAGAGAACCAAAGA 1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCAAAACTATCAGGTTTGTGAGGTCCAGAACGAAGCATGATGTTGACATGCGAATTGGA 2294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTCTTGGGATGTGGACATCGCAAACAAACTTGAATCTGGAGGAATCCCTGGGAGAATT 2414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITCAGGAGACCCGCAGTIACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAG 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCCACAGGGGGGGGGGGGGGGGGGGGGTGGCGTTGGGGAAATGGCAGTTCGATGTG 846
                                                                                                                                                                                                                                                                                                                                                                                                                                            139 CGGGCTGCCGTCCTCAGCGGCCTGGGCCTCCCACCTTGCATTTGATCTTGGCCTGGCAA 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTC 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGGGTGTCTCAGCGCCAGGCC 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCAACACAAAAAAAAAGAAG-----ACATGTTCCACAAGATCTACATACAGAAG 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATG 726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATC 906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGT 966
                                                                                                                                                                                                                                                                                                                                                    79 GGCCTCTGGTGCCCTGTGTTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATG 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             487 CATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGGAGCGGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGGAGATGAAAGAAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGAGGCCATCTCGCTGGTACGTGAGGTGACATGTGAATGTGAACATGCGCGTGGGC
                                                                                                                                                                                                                                                        Score 320.6; DB 3; Length
Pred. No. 7.8e-76;
0; Mismatches 374; Indels
FELECOMMUNICATION INFORMATION
                   TELEPHONE: (512) 418-3000
TELEFAX: (512) 447-757
INFORMATION FOR SEC ID NO: 15:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                     17.7%;
59.5%;
                                                                                                             LENGTH: 4601 base pairs
                                                                                                                                                                                                                                                                                Best_Local Similarity 59.5
Matches 567; Conservative
                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                      linear
                                                                                                                                                                                      ; TOPOLOGY:
US-08-726-214-15
                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        907
```

```
1450 GGTGGTGACCGACACTACATGCCCGACAACAACTTTCACAGCCCTCTATGTCAAGCGGCAC 1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 5, Application US/08307896C Patent No. 6034071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.8%;
60.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; ORGANISM: Rattus norvegicus US-08-307-896-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 60.7
Matches 503; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AG 1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2050 CG 2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 4008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-307-896-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE:
                                                                                                                                                                                                                670
                                                                                                                                                                                                                                                                            730
                                                                                                                                                                                                                                                                                                        1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1030
                                                                                                                                                     610
                                                                                                                                                                                                                                                                                                                                      790
                                                                                                                                                                                                                                                                                                                                                                                                  850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      970
                                ò
                                                           셤
                                                                                         ŏ
                                                                                                                    g
                                                                                                                                                     ò
                                                                                                                                                                               qq
                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2415 CACATTTCCAAAGCCACACTGGATTGCCTCAGTGGTGACTATAATGTGGAAGAGGGCCAC 2474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1270 TICCACAAGCACCAGCIGCAGGACGCGICCAGGGATCTTTTATCTACACCGICAAAIGC 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        220 CTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGCTCTCTGCACCAACGTCATTAGCATC 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATTGCCCCAGCACGTTGCCATGGAGATGAAGAAGAAGACATCA-------
                             GGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCAT 1019
                                               Length 5199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Tang, Wel-Jen
APPLICANT: Tang, Wel-Jen
APPLICANT: Gliman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/726,214
FILING DATE: Concurrently Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 311.2; DB
Pred. No. 2.7e-73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERNICE/DOCKET NUMBER: UTSD:450
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEPHONE: (512) 447-7577
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
LENGTH: 5199 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY AGENT INFORMATION:
                                                                                                                                                                                                                                                                          Arnold, White & Durkee
                                                                                                                                                                                                                                                                                                                                     United States of America
                                                                                                                                   Sequence 13, Application US/08726214
Patent No. 6107076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 17.2%;
Best Local Similarity 62.2%;
Matches 524; Conservative
                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                       ADDRESSEE: Arnold, Wh. STREET: P.O. Box 4433 CITY: Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                        Texas
                                                                                                                                                                                                                                                                                                                  STATE: Texas
COUNTRY: Uni
ZIP: 77210
                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY:
US-08-726-214-13
                             296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  443
g
                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
GGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGCGCC 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             606
                                                                                                                                                                                                                                                                                       CTGCCGGAGGCCCGGGCCGACCATGCCCACTGTGTGGAGATGGGGGTAGACATGATT 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             624 CCTGTTCTGGCAGATACTGGCCAATGTGATCATTTTCATTTGGGGAACTTGGCGGAGC 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      279 CTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTA 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                684 craccacaagcaccrcargaagcrrgccrrgcaagcaaaccrarcgagacacargraarrg 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          219 CCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCAT 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
GCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGG
                                                                                                                                                                                                                                                                                                                                                                                     GAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCCGCGTGGGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACAGCGGGCGCGTGCACTGCGGCGTCCTTGCGGAAATGGCAGTTCGATGTGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           910 ATCACTCGGCCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGT
                                                                                              ACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 4008;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: IYENGAR,
TITLE OF INVENTION: MUTANT ACTIVATED GSALPHA AND ADENYLXL
TITLE OF INVENTION: OYCLASE 2 FOR USE AS THERAPEUTIC AGENTS
FILE REFERENCE: 29770
CURRENT APPLICATION UNMBER: US/08/307,896C
CURRENT FILING DATE: 1994-09-16
NUMBER OF SEQ ID NOS: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 286; DB 3; I
Pred. No. 1.3e-66;
0; Mismatches 295;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
```

ï

```
1224 GCATTCTGGGAACGTTCTCTGTGGTGTGATTGGTCTCCAGAAGTGGCAGTATGATGTGTG 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1284 GTCTCATGATGTTACTCTGGCAAACCACATGGAAGCTGGAGGAGTCCCTGGGCGTGTTCA 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           609 TGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGTGTCAGG 668
                                                                                                                                                                                                                                                                                                                                            GCTGCCGGAGGCCCGGCCGACCATGCCCACTGCTGTGGAGATGGGGGGTAGACATGAT 728
                                                                                                                                                                                      CATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTC
                                                                                                                489 TGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTG
                                                                                                                                                                                                                             CACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                   729 TGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTAATGTGAACATGCGCGTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCACAGGGGGGGGGGGCGTGCGTTGCGGGAAATGGCAGTTCGATGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 969 IGGCAAGGCGAACGCGTACCICAAGGAGCAGCACATIGAGACTTTCCT 1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADENYLYL CYCLASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                       399 GGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Tang, Wei-Jen
APPLICANT: Gliman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN,
TITLE OF INVENTION: AND USES THEREFOR NUMBER OF SEQUENCES: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: P.O. Box 4433
CTTY: Houston
STATE: Texae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3, Application US/08726214
Patent No. 6107076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS: ADDRESSEE: Arnold, W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-08-726-214-3
                                                                                                                                                                                                                                                                                                                                            699
339
                                                                                                              443
                                                                                                                                                                                                                             549
                                                                                                                                                                                                                                                                                                                                                                                                                                                            789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           606
 ò
                         g
                                                                             qq
                                                                                                           ò
                                                                                                                                        a
                                                                                                                                                                                            g
                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                           Dp
                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                 Ωp
                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                           ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                     δ
                                                                                                                                                                    ò
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                 δ
```

```
279 CIGCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTA 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             924 CACCAACGTGAGCATATATACGCTGACATTGTTGGCTTCACCCGCCTTGCAAGCGATTG 983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 219 CCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCAT 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              804 CTTGCTGCCAGCTCACATCGCCATGGAGATGAAAGCTGAAATCATTCAGAGGCTGCAGGG 863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        044 AAAGGAGAATGAATGCATGAGAATTAAAATTTTAGGAGACTGCTATTACTGTGTTTCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1104 GCTCCCTATATCACTCCCTAACCATGCCAAGAACTGTGTGAAAATGGGATTGGATATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     684 CTACCACAAGCACCTCATGGAGCTTGCCTTGCAGCAAACCTATCGGGACACGTGTAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          489 TGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                549 CACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            729 TGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     789 CCACAGCGGGCGCGTGCACTGCGGCGTTGCGGAAATGGCAGTTCGATGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1224 GCATTCTGGGAACGTTCTCTGTGGTGTGATTGGTCTCCAGAAGTGGCAGTATGATGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 4008
                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         399 GGTATTGCCCCAGCACGTTGCCATGGAGATGAAGAAGACATCA----
                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches 295;
                                                                                                                                                                                                                                                                                                                                                                                        15.8%; Score 286; DB 3; 60.7%; Pred. No. 1.3e-66;
UMBER: US/08/726,214
Concurrently Herewith
               FILING DATE: Concurrently Herewith CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                  UTSD:450
                                                                                                                          NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REPERENCE/DOCKET NUMBER: UTSD
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEFAX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 3:
SEQUINCE CHARACTERISTICS:
LENGTH: 4008 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 503; Conservative
                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                  STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                   US-08-726-214-3
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
```

;;

Search completed: March 1, 2003, 04:05:16 Job time : 85.382 secs

GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen Ltd.

o jo long Mo	1.5.
ow nucreic - nu	om nucieic - nucieic search, using sw model
Run on:	<pre>February 28, 2003, 21:13:01 ; Search time 3111.21 Seconds (without alignments) 16949.756 Million cell updates/sec</pre>
Title: Perfect score: Sequence:	US-09-750-240-3 1812 1 gttaacgtggtgctgggcatgcagctttcctgaggtgttc 1812
Scoring table:	IDENTITY_NUC Gapop 10.0 , Gapext 1.0
Searched:	2054640 seqs, 14551402878 residues
Total number of	Total number of hits satisfying chosen parameters: 4109280
Minimum DB seq length: 0 Maximum DB seq length: 20	Minimum DB seq length: 0 Maximum DB seq length: 2000000000
Post-processing	Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries
Database :	GenEmbl:* 1: 9b_ba:* 2: 9b_htg:* 3: 9b_in:*

9D_0n:*
9D_0n:*
9D_ph:*
9D_ph:*
9D_ph:*
9D_ph:*
9D_ph:*
9D_pr:*
9D_sy:*
9D_sy:

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	AR174472 Sequence AX189759 Sequence AR174473 Sequence AX189761 Sequence	AX189766 Sequence AF250226 Homo sapi AX189768 Sequence AB007882 Homo sapi M94968 Canis famil	12958 Sequence 1 M96653 Mus musculu AR106659 Sequence M96160 Rattus norv AX305965 Sequence	M93422 Mouse adeny L01115 Rattus norv Z29371 O.cuniculus M88649 Canis famil AR106658 Sequence	M96159 Rattus nor AF497517 Homo sapi AX418303 Sequence AX093840 Homo sapi AJ293817 Gallus ga M97886 Canis famil	M2579 Bovine aden AR106654 Sequence AR053990 Mus musc AX418306 Sequence AR106662 Sequence M81887 Drosophila	249806 B.taurus mR AB011083 Homo sapi AK027857 Homo sapi AF033861 Homo sapi 235309 H.sapiens m AR106656 Sequence M55075 R.norvegicu AR45089 Mus muscu AR106661 Sequence	L2696 Rat adenyly U85021 Mus musculu AK033706 Homo sapi AX463638 Sequence AX463638 Sequence	linear PAT 17-DEC-2001 Post, S.R. and Gao, M.
									DNA .,ail
aı	AR174472 AX189759 AR174473 AX189761	AX189766 AF250226 AX189768 AB007882 DOGADENCYC	129958 MUSADNLCYC AR106659 RATADCYB AX305965	MUSADCYC RATADC OCMRADCYV DOGADNCYC AR106658	RATADCYA AF497517 AX418303 AK093840 · GGA293817 DOGADCYC	BOVADC AR106654 AF053980 AX418306 AR106662 DRORAC	BTAC11MR AB011083 AK027857 AF033861 HSADENCYR AR106656 RATADCY3 AF458089	AX463638 AX463638 AX463638 AX463638 AX463638	1812 bp GI:17914792 GI:17914792 to 1812) rk., Insel, P.A., Ping, P for congestive heart f 306830-A 3 23-OCT-2001; ation/Qualifiers
DB	i	00004 <i>1</i>	0 0				4000000110		9147/ 912) 112) Inse cong
Length	1812 1812 3549 3549	3552 6463 3582 5877 4046	4046 3465 4131 4131 5841	5841 6036 4995 4545 3924	4847 2743 3137 2554 4236 2429	3978 3978 2857 3811 1652 7546	4533 4601 4080 4080 4005 4533 4533 4601	4601 4901 2496 3243 6196	3 from patent .1 GI:17914792 fited. 1 to 1812) 1 Kirk., Insel, 2 apy for conges 35 6306830-A 3 Location/Qual,
74							18.8 18.7 18.7 18.5 18.5		1472 1472 1472 1472 0wn. 0wn. sssil then then
Score	1812 1812 1808.4 1808.4	1763.4 1763 1763 1657.8 1604.2	1519.8 1449.4 1437.2 1437.2	1431.8 1427.6 906.2 886.6 858.2	858.2 811 799 798 780 667.2	436 436 415.2 404 393.2 362.2	33333333333333333333333333333333333333	320.6 320.6 318.2 316.6 316.6	77 TE
Result No.							~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		RESULT 1 LOCUS LOCUS LOCUS ACESION VERSION VER

961 961	1021	1081	Qy 1141 ACCAAGGACTCCAAG 	Qy 1201 GGCACCCAAGATGCC	1261	1321	Qy 1381 GTFGCCTGTGCCTG	Qy 1441 CACTCCACCCTGATG	Qy 1501 CTGATCTGTGCTGTG 	Qy 1561 CGCAGCATTGTCCGC 	1621	Oy 1681 GCAGCCCGGATGCTG	1741 AATTACTCTCTGC 	Oy 1801 CCTGAGGTGTTC 18 			SOURCE human. ORGANISM Homo sapiens Eukaryota; Me Mammalia; Eut
	Length 1812; Indels 0; Gaps 0;		DATCGCATACACG 120		3CAGCTCGGTGC 240	TTATCCAGCAGAG 300	JCGGCTCCACCTG 360	CCAGCACGTTGCC 420	A B B B B B B B B B B B B B B B B B B B	ZACCAGCCTGGCA 540	TGCCCGGTTTGAC 600	TGTTACTACTGT 660	3GAGATGGGGTA 720 3GAGATGGGGTA 720		AAAATGGCAGTTC 840 	AAGCCGGGCTGGC 900	GGAGGGGGCG 960
11812 /organism-"unknown" 539 c 507 g 405 t	100.0%; Score 1812; DB 6; 100.0%; Pred. No. 0; vative 0; Mismatches 0;	GTTAACGTGGTGCTGGGCATCCTGGCGGCGGTGCAGGTCGGGGCGCTTTCGCAGCAGC 	CCGCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACG	CTCCTCCCCATCCGCATGCGGGCTGCCGCCTCAGCGGCCTGGGGCTCTCCACCTTGCAT	TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCC	AATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACAACTATCCAGCAGGGGGGGG	GTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACTG	CAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCC 	atggagatgaaagaagacatcaacacaaaaaaaagaagacatgttccacaagatctacata 	CAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCA 	TCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACTCTTTGCCCGGTTTGACTITITITITITITITITITITITITITITITITITITI	AAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGT 	GTGTCAGGGCTGCCGGAGGCCCGGGCCGATGCCCACTGCTGTGTGGAGATGGGGGTA 	GACATGATÎGAGGCCATCTCGCTGGTGACGTGACAGGTGACAGGTGTGAATGTGAACATGCGC 	GTGGCCATCCACAGCGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTC	GATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGC 	CGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCA
source 1 // BASE COUNT 361 a	Query Match Best Local Similarity Matches 1812; Conser	Oy 1 GTTAACGTGGTG 	Qy 61 CCGCGCAGCCCC 	Qy 121 CTCCTCCCATC 	Qy 181 TTGATCTTGGCC	Qy 241 AATGTGCTGCTG Db 241 AATGTGCTGCTG	Qy 301 GrgrcrcAGCGC 	Qy 361 CAGCATGAGAAT 	Oy 421 ATGGAGATGAAA Db 421 ATGGAGATGAAA	Oy 481 CAGAAGCATGAC 	Oy 541 TCCCAGTGCACT [Oy 601 AAGCTGGCTGCG	Qy 661 GTGTCAGGGCTG 	Qy 721 GACATGATŤGAG { 721 GACATGATTGAG	Qy 781 GTGGGCATCCAC 	Qy 841 GATGTGGTCC 	Qy 901 CGCATCCACATC

```
linear PAT 08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 to 1812)
                                                                                                                           1140
                                                  1080
                                                                            1080
                                                                                                   1140
                                                                                                                                                     1200
                                                                                                                                                                              1200
                                                                                                                                                                                                       1260
                                                                                                                                                                                                                                 1260
                                                                                                                                                                                                                                                           1320
                                                                                                                                                                                                                                                                                                             1380
                                                                                                                                                                                                                                                                                                                                       1380
                                                                                                                                                                                                                                                                                                                                                             GTTGGTCTTCTGCTTCATCTCATCAGCTTCTAATTTTCCCA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                  1500
                                                                                                                                                                                                                                                                                                                                                                                                                                         1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1680
GCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATC 1020
                                                                                                                                                                                                                                                                       GTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAATTTAACACCTGCTGACATCACTGCCTGCCACCTGCAGCAGCTC 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTGGATGCTCCCCTGTGTGAGGCCACCATGCCCACCTGCAGCTTT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGG
                                                                                                                                                                                                       GCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTG
             KGGCCTTCCGCCAGATGGCATTGATGATTCCAGCAAGACAACCGG
                                                                                                                                                                                                                                                                                                                           GAAACGGAAAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACT
                                                                                                                                                                                                                                                            TGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTC
                                                                                                                                                                                                                                                                                                               TGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1812 bp
rom Patent W00148164.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:15143134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
```

```
PAT 17-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                       1380
                                                                                                                                                                                                                                                                                                                                                                                                                    1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1800
                                                                  1020
                                                                                                              1080
                                                                                                                                     1080
                                                                                                                                                            1140
                                                                                                                                                                                  1140
                                                                                                                                                                                                          1200
                                                                                                                                                                                                                                1200
                                                                                                                                                                                                                                                       1260
                                                                                                                                                                                                                                                                              1260
                                                                                                                                                                                                                                                                                                     1320
                                                                                                                                                                                                                                                                                                                          1320
                                                                                                                                                                                                                                                                                                                                                 1380
                                                                                                                                                                                                                                                                                                                                                                                              1440
                                                                                                                                                                                                                                                                                                                                                                                                                                         1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1800
                                                                             TTGCCTGTGCCTGTTGGTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGC
                    CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGG
                                                                                                                                                                                                                                                        GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATC
                                                                                                                                                                                                                                                                                                     ATGCCCGCAGCATTGATCACCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTC
                                                                                                                                                                                                                                                                                                              ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTT
                                                                  GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATC
                                                                                                                TGGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACT
                                                                                                                                                            GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AR174473 3549 bp 3549 bp 3569ence 5 from patent US 6306830. AR174473 AR174473.1 GI:17914793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAGGTGTTC 1812
```

```
PAT 08-AUG-2001
                                                                                                                            1142
                                                                                                                                                                                                                                                                               1442
                                                                                                                                                                                                                                                                                                            1502
                                                                                                                                                                                                                                                                                                                                         1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1802
                                                                 1022
                                                                                               1082
                                                                                                                                                          1202
                                                                                                                                                                                       1262
                                                                                                                                                                                                                                                                 2015
                                                                                                                                                                                                                                                                                              2075
                                                                                                                                                                                                                                                                                                                           2135
                                                                                                                                                                                                                                                                                                                                                        2195
                                                                                                                                                                                                                                                                                                                                                                       1622
                                                                                                                                                                                                                                                                                                                                                                                      2255
                                                                                                                                                                                                                                                                                                                                                                                                     1682
                                                                                                                                                                                                                                                                                                                                                                                                                    2315
                                                                                                                                                                                                                                                  1382
                                    962
      CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG
                                                                 CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAAACGGGG
                                                                                                                                                                 CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGA
                                                                                                                                                                                               GGGCGCCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCG
                                                                                                                            GGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGAC
                                                                                                                                                                                                                     TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTTGCTCACCTTCCA
                                                                                                                                                                                                                                                  GAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTACGT
                                                                                                                                                                                                                                                                                                                                          GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG
                                                                                                                                                                                                                                                                                                                                                                        CAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                     GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                            GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAGGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AX189761
                                                                                                                                                                        1776
                     1476
                                                   1536
                                                                                1596
                                                                                                              1656
                                                                                                                                                                                       1203
                                                                                                                                                                                                      1836
                                                                                                                                                                                                                     1263
                                                                                                                                                                                                                                   1896
                                                                                                                                                                                                                                                               1956
                                                                                                                                                                                                                                                                               1383
                                                                                                                                                                                                                                                                                              2016
                                                                                                                                                                                                                                                                                                                           2076
                                                                                                                                                                                                                                                                                                                                                         2136
                                                                                                                                                                                                                                                                                                                                                                                      2196
                                                                                                                                                                                                                                                                                                                                                                                                                                   1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1803
                                                                                               1023
                                                                                                                            1083
                                                                                                                                           1716
                                                                                                                                                          1143
                                                                                                                                                                                                                                                  1323
                                                                                                                                                                                                                                                                                                             1443
                                                                                                                                                                                                                                                                                                                                          1503
                                                                                                                                                                                                                                                                                                                                                                        1563
                                                                                                                                                                                                                                                                                                                                                                                                     1623
                                                                                                                                                                                                                                                                                                                                                                                                                    2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2436
       843
                                    903
                                                                  963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
AX189761
LOCUS
                  g
                                               qq
                                                                              qq
                                                                                              οy
                                                                                                         g
                                                                                                                           δ
                                                                                                                                       g
                                                                                                                                                         δy
                                                                                                                                                                     g
                                                                                                                                                                                       ò
                                                                                                                                                                                                    g
                                                                                                                                                                                                                 οχ
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                     ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                    δ
                                                                οy
                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                  1055
                                                                                                                                                                                                                                                                                                                                                                                             1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1355
                                                                                                                                                                                                             815
                                                                                                                                                                                                                            242
                                                                                                                                                                                                                                          875
                                                                                                                                                                                                                                                                        935
                                                                                                                                                                                                                                                                                       362
                                                                                                                                                                                                                                                                                                                    422
                                                                                                                                                                                                                                                                                                                                                  482
                                                                                                                                                                                                                                                                                                                                                                               542
                                                                                                                                                                                                                                                                                                                                                                                                            602
                                                                                                                                                                                                                                                                                                                                                                                                                                         662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  842
                                                                                                                                                                 122
                                                                                                                                                                               755
                                                                                                                                                                                               182
                                                                                                                                                                                                                                                         302
                                                                                                                                                  695
                                                                                                                     Gaps
                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                         GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGGAAA
                                                                                                                                                                                                                                                                                              GCATGAGAATCGGCAGCAGGAGCGGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT
                                                                                                                                                                                                                                                                                                                            1176 CCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                        3 TAACGTGGTGCTGGCGATCCTGGCGGCAGTGGCAGGTCGGGGGCGCTTTCGCAGCAGCCC
                                                                                                                                           CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCCCACCTTGCATTT
                                                                                                                                                                                                                                          GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                 GTCTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                                                                                                                                                                 TGTGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACCACTATCCAGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                            CCAGTGCACTGCGCAGGAGCTGGTCATGACCTGAATGAGCTCTTTGCCCGGTTTGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCGTTGCGGAAATGGCAGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACGTGTGAATGTGAACATGCGCGT
                                    Ξ
                                    Gao,
                                                                                                      Length 3549;
                                                                                                                     ó
                                     and
                                                                                                                     Indels
                                    Post, S.R.
                                                                                                      . 9
                                                                                                                     1;
                            1 (bases 1 to 3549)
Hammond, H.Kirk., Insel, B.A., Ping. E., Post Gene therapy for congestive heart) fallure patent: US 6306830-A $\frac{2}{2}\corr-2001;
                                                                                                      DB
                                                                                ų
                                                                                                      Score 1808.4;
Pred. No. 0;
                                                                                                                     0; Mismatches
                                                                                764
                                                          .ocation/Qual<del>\£</del>iers.
1. .3549
                                                                         /organism="unknown"
1025 c 1061 g
                                                                                                      99.88;
                                                                                                                     Conservative
                   Unclassified
                                                                                                             Best_Local Similarity
Matches 1809; Conserv
                                                                                ø
     Unknown.
Unknown.
                                                                                669
                                                                                                      Query Match
             ORGANISM
                                                                                COUNT
                                                                                                                                                 989
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1296
                                    AUTHORS
TITLE
                                                                                                                                                                                                            756
                                                                                                                                                                                                                                                                       918
                                                                                                                                                                                                                                                                                                     936
                                                                                                                                                                                                                                                                                                                   363
                                                                                                                                                                                                                                                                                                                                  966
                                                                                                                                                                                                                                                                                                                                                 423
                                                                                                                                                                                              123
                                                                                                                                                                                                                           183
                                                                                                                                                                                                                                          816
                                                                                                                                                                                                                                                        243
                                                                                                                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                                                                                                                                           543
                                                   JOURNAL
                                                                                                                                                                63
                                                                                                                                                                               969
                                                                                                                                                                                                                                                                                                                                                                                                                                         603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1416
                            REFERENCE
KEYWORDS
                                                          FEATURES
                                                                                        ORIGIN
                                                                                BASE
                                                                                                                                                                ò
                                                                                                                                                                             g
                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                    QQ
                                                                                                                                    ò
                                                                                                                                               q
                                                                                                                                                                                            ò
                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                    P
P
                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                              Db
                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
```

us-09-750-240-3.rge

```
ö
                                                         Craniata; Vertebrata; Euteleostomi;
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                722
                                                                                                                                                                                                                                                                                                                                                         242
                                                                                                                                                                                                                                                                                                                                                                                                                                                          995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGGTCGGTATTGCCCCAGCACGTTGCCAT 422
                                                                                                                                                                                                                                                 CATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAAATGTGAACATGCGCGT 782
                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTCCCCATCCGCATGCGGGCTGCCTCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                             CCTCCCCATCGCGATGCGGGCTGCCTCACCGGCCTGGGCCTCTCCACCTTTT
                                                                                                                                                                                                                                                                                                                                                        GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCACCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                           GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                              TGTGCTGCTGCTCCTCTGCACCAACGTCATTAGCATCTGCACAACACATCCAGCAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                         GTCTCAGCGCCAGGCCTTTCAGGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 TAACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGGTAGA
                                                                                                                                                                                                                    ;
                                                                                                                                                                                                  3549;
                                                                                                                                                                                                 Length
                                                                                                                                                                                                                    Indels
                                                                                    Hammond, H. K. and GaorW. Gene therapy for odgestive heart fahlure Patent: Wo 0148164 % 5 05-JuL-2001.—
THE REGENTS OF THE UNIVERSITY.OF_CALFFORNIA
                                                                                                                                                                                                9
                                                                                                                                                                                                                    ÷
                                                                                                                                                                                                 DB
                                                                                                                                                                                               Score 1808.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                   764
                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
1025 c 1061 g 764
5 from Patent WO0148164
                                                Homo sapiens
Bukaryota; Metazoa; Chordata;
Bummalla; Eutheria; Primates;
1 (bases 1 to 3549)
                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                    ö
                  GI:15143135
                                                                                                                                                                                                99.8%;
                                                                                                                                                                                                                  Matches 1809; Conservative
                                                                                                                                                                                                          Similarity
                  AX189761.1
                                                                                                                                                                    ದ
 Sequence
                                       human.
                                                                                                                                                                                                Query Match
                                                                                                                                                                                                           Local
                                                                                                                                        source
                                                                                                                                                                  BASE COUNT
ORIGIN
                                                ORGANISM
DEFINITION
         ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                         989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1176
                                                                                                                                                                                                                                                                                                                                                                           816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1296
                                                                                                                                                                                                                                                                            63
                                                                                                                                                                                                                                                                                              969
                                                                                                                                                                                                                                                                                                                  123
                                                                                                                                                                                                                                                                                                                                    95/
                                                                                                                                                                                                                                                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                              243
                                                                                                                                                                                                                                                                                                                                                                                                                 918
                                                                                                                                                                                                                                                                                                                                                                                                                                      303
                                                                                                                                                                                                                                                                                                                                                                                                                                                         936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      723
                                                                             REFERENCE
                                                                                      AUTHORS
                                                                                                          JOURNAL
                                                                                                                              FEATURES
                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                     δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωý
                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
```

```
1535
                                                                                                                                                          1022
                                                                                                                                                                                                                                                                                   1202
                                                                                                                                                                                                                                                                                                                            1262
                                                                                                                                                                                                                                                                                                                                                                    1322
                                                                                                                                                                                                                                                                                                                                                                                                                                  2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2435
                                                                                 CCGTGGTGGCAAGCGCAAACGCGTACCTCAAGGAGCAGCACTTTGAGACTTTCCTCATCCT
                                                                                                                                                                                                             GGGCGCCAGCCAGAAACGGAAAGAGAGAAAGGCATGCCTGGCCAAGCTGCAGCGGACTCG
                                                                                                                                                                                                                                                                                                                                       1263 TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                2016 TGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCTCAGCTTCTAATTTTCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2076 CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTGAATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGA
                                                                       TGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCG
                                                                                                                 CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG
                                                                                                                                                          CCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCT
                                                                                                                                                                                                    GGGCGCCAGCCAGAAACGGAAAGAGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCG
                                                                                                                                                                                                                                                                                    CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGG
                                                                                                                                                                                                                                                                                                                            CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGA
                                                                                                                                                                                                                                                                                                                                                                                                              GAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                         1383 IGCCIGIGCCCTGTIGGICTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2136 GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACCCCCCATACGGAGCTGTGC
                             GGGCATCCACAGCGGGGGGGGGTGCACTGGGGGTTGCGTTGCGAAATGGCAGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1683
                                                  1416
                                                                                                                                     1536
                                                                                                                                                                                                                                                                                   1143
                                                                                                                                                                                                                                                                                                       1776
                                                                                                                                                                                                                                                                                                                            1203
                                                                                                                                                                                                                                                                                                                                                                                        1896
                                                                                                                                                                                                                                                                                                                                                                                                              1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1803
         1356
                              783
                                                                                           1476
                                                                                                                903
                                                                                                                                                          963
                                                                                                                                                                                                  1023
                                                                                                                                                                                                                      1656
                                                                                                                                                                                                                                                                                                                                                                                                                                  1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1623
                             οy
                                                QQ
                                                                     δ
                                                                                      g
                                                                                                                ò
                                                                                                                                   g
                                                                                                                                                     ò
                                                                                                                                                                        g
                                                                                                                                                                                                ò
                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                          δŻ
                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                            Dρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
```

```
1356
                                                                                                                                                                                096
                                                                                                                                                                                                                  1020
                                                                                                                                                                                                                                                  1080
                                                                                                                                                                                                                                                                                    1140
          099
                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1620
                                           720
                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                      1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2316
                      qq
                                                       g
                                                                                         Ω
                                                                                                                           g
                                                                                                                                                            g
                                                                                                                                                                                           qq
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                              Op
                                                                                                                                                                                                                                                                                                                                 qq
          οy
                                          ò
                                                                         οy
                                                                                                              δ
                                                                                                                                              δý
                                                                                                                                                                               δŽ
                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                             Óγ
                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                δŽ
                                                                                                                                                                                                                                                                                                                                                    QY
Db
                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                 OD
                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                          ä
                                           08-AUG-2001
                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       935
                                                                                                                                                                                                                                                                                                                                                                                                                              362
                                                                                                                                                                                                                                                                          695
                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                   182
                                                                                                                                                                                                                                                                                                                                             815
                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                             875
                                                                                                                                                                                                                                                                                                                                                                                              302
                                                                                                                                                                                                                                                                                                                                                                                                                                              995
                                                                                                                                                                                                                                                                                                                                                                                                                                                               422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   629
                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                     GTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCACTTACAGGCCCGGCTCCACCTGCAGTTACATCCAGGCCCGGCTTCAGGAGACCCGCGGTTACATCCAGGCCCGGCTCCACGCCGCTCCAGGCCCGCTCCACGCCCGCTCCAGGCCCTGCA
                                                                                                                                                                                                                                                         TAACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGCACCC
                                                                                                                                                                                                                                                                         636 TTACGTGGTGCTGGCGCATCCTGGCGGCGCAGGTCGGGGGGGCGCTCTCGCAGCAGCCC
                                                                                                                                                                                                                                                                                         GCGCAGCCCCTCTGCGGGCCTCTGGTGCCTTTTGTATACATCGCATACACGCT
                                                                                                                                                                                                                                                                                                                                     GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                            TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                     CAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTG
                                                                                                                                                                                                                                                                                                                           CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATGAGAATCGGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGATGAAAGAAGACATCAACACAAAAAAAAGAAGAC---ATGTTCCACAAGATCTACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGA
                                                                                                                                                                                                                                                                 PAT
                                                                                                                                                                                                                         Length 3552;
                                                                                                                                                                                                                                          3;
                                                                                                              Hominidae;
                                                                                                     Vertebrata;
                                           linear
                                                                                                                                                                                                                                          Indels
                                                                                                                   1 (bases 1 to 3552)

Hammond, H. K. and Gao, M.
Gene therapy for congestive heart failure
Patent: WO 0148164-A 10 05-JUL-2001;
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (US)
                                                                                                                                                                                                                          ;
9
                                                                                                                                                                                                                                         21;
                                                                                                     Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                          DB
                                           DNA
                                                                                                                                                                                                 ų
                                                                                                                                                                                                                        Score 1763.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                761
                                          3552 bp
WO0148164
                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
1037 c 1068 g 761
                                                                                           Homo sapiens
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                               Location/Qualifiers
                                                  Patent
                                                                   AX189766.1 GI:15143139
                                                                                                                                                                                                                       Query Match 97.3%;
Best Local Similarity 98.7%;
Matches 1789; Conservative
                                                  from
2436 TGAGGTGTCC 2445
                                                 Sequence 10
AX189766
                                                                                                                                                                                                 æ
                                          AX189766
                                                                                    human
                                                DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                        source
                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1116
                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                         က
                                                                                                                                                                                                                                                                                                                                                                                                                                             936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1176
                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                           123
                                                                                                                                                                                                                                                                                                                                          756
                                                                                                                                                                                                                                                                                                                                                            183
                                                                                                                                                                                                                                                                                                                                                                            816
                                                                                                                                                                                                                                                                                                                                                                                             243
                                                                                                                                                                                                                                                                                                                                                                                                            876
                                                                                                                                                                                                                                                                                                                                                                                                                             303
                                                                                                                                                                                                                                                                                                                                                                                                                                                             363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               423
                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1236
                        RESULT 5
AX189766
LOCUS
                                                                                                                     REFERENCE
                                                                                                                                                               FEATURES
g
                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                       Ωp
                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
1415
                                                                                                                                                                                         1475
                                                                                                                                                                                                                                                                1535
                                                                                                                                                                                                                                                                                                                                           1595
                                                                                                                                                                                                                                                                                                                                                                                1019
                                                                                                                                                                                                                                                                                                                                                                                                                      1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTC 1559
                                                                                                                                                   839
                                                                        779
                                                                                                                                                                                                                              899
                                                                                                                                                                                                                                                                                                       959
                                                                                                                                                                                                                          1956 CCAGAGAGAGCATCTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTA
                 1296 TGTGTCAGGGCTGCCGGAGGCCCGACCATGCCCACTGCTGTGTGGAGATGGGGGT
                                                                                            CGTGGGCATCCACAGGGGGGGGGGGGACTGCGGGGGTTGCGGAAATGGCAGTT
                                                                                                                                                                     1416 CGTGGGCATCCACAGCGGGGCGCGCGCACTGCGGCTTGCCGAAATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                AGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCAT
                                                                                                                                                                                                                                                                                                                                                                                                    CCTGGGCGCCAGCCAGAAACGGAAAGAGAAAGGCATGCTGGCCAAGCTGCAGCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1716 TCGGGCCAACTCCATGGAAGGGCTGATGCCGCGCTGGGTTCCTGATCGTGGTCCTTCTCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1776 GACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATGCCAGCAAAGACAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1200 GGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTG
TGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCCACTGCTGTGGAGATGGGGGT
                                                                          AGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1440 ACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2196 CCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTCCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1380 GETTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2016 CGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCTAGCTTCTCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCT
```

ä

ŏ g οy g

```
962 GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC 1021
                                                                                                       Similarity
                       1264 a
                                                                                   Query Match
                                                                                                         Local
                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                     원
                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Сp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LITAVLLAFHAAPARPOPAYVALLACAAALFYOLLMYOURHSFRODSMWYOSYVUGI
LIAAVOYGGALAADPRSPSAGIWCPVEFYYIAYTLLPTRWRAAYLSGLGISTLHILLAW
QLNRGDAFLWRQLGANVLLELCTNVIGICTHYPAESORORAFOETRGYIQARLHICHEAN
ROQEBLLLSVLPOHYAMEMEEDINFKEDDMPHKIYIQKHDNYSILFADIEGTSTLA
SQCTAQELVWTLNELFARFDKLAAENHCLRIKILGDCYYCVSGLPEARADHAHCCVEM
GVDMIENISLVREVYTOWNWRYGIHSGRYHGCYLGLRKWQEDWNSNDYLANHMEAG
GRAGIHIITRATLQYLNGDYEVEPGRGGENNAYLKEQHIEFILLGASQKRKEEKAML
AKLQRTRANSMSCLAMPWYDDRAFSRTKDSKARRQMGTDDSSKDNRGYODALMPEDED
AKLQRTRANSMSCLAMPWYDRAFSRTKDSKARRQMGTDDSSKDNRGYODALLWFCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="MGWFSGLLVPKVDERKTAMGERNGOKRSBRRGTRAGGFCTPRYM
SCLRDAEPPSPTPAGPPRCPMQDDAFIRRGGPCKGKELGLRAVALGFEDTEVTTTAGG
TAEVAPDAVPRSGRSCWRRLVQVFQSKQFRSAKLERLYQRYFFQMNQSSLTLLMAVLV
                                                                                                                                                                                                                               PRI 15-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSTAVGIFSVLLVFTSAIANMFTCNHTPIRSCAARMLNLTPADITACHLOOLNYSLGL
DAPLCEGTMPTCSFPEYFIGNMLLSLLASSVFLHISSIGKLAMIFVLGLIYLVLLLLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QSCECVAVMFASIANFSEFYVELEANNEGVECLRLLNEIIADFDEIISEERFRQLEKI
KTIGSTYMAASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQMKIGLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ICFIQLLIFPHSTLMLGIYASIFLLLITVLICAVYSCGSLFPKALQRLSRSIVRSRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PPATIFDNYDLLLGVHGLASSNETFDGLDCPAAGRVALKYMTPVILLVFALALYLHAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QVESTARLDFLWKLQATGEKEEMEELQAYNRRLLHNILPKDVAAHFLARERRNDELYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MGPVVAGVIGARKPQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (28-MAR-2000) Lab Etude des Relations - Instabilite genetique et Cancer UPR 2169, Institut de Recherches sur le Cancer CNRS IFR 1221, 7 rue Guy Moquet, Villejuif 94801, France Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            type VI in normal
                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
1740 CAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTT 1799
                       2376 CAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGTGGGGCACCATGCCCACGTGCAGCTT 2435
                                                                                                                                                                                                                                                                                                                                                                                                                             Wicker,R., Catalan,A.G., Callleux,A., Starenki,D., Stengel,D., Sarasin,A. and Suarez,H.G.
                                                                                                                                                                                                              AF.250226 6463 bp mRNA linear PRI 1
Homo sapiens adenylyl cyclase type VI mRNA, complete cds.
AF.250226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wicker,R., Gascon Catalan,A., Cailleux,A.-F., Starenki,D. Stengel,D., Sarasin,A. and Suarez,H.G. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and expression of human adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochim. Biophys. Acta 1493 (1-2), 279-283 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="adenylyl cyclase type VI"
/protein_id="AAF82478.1"
/db_xref="GI:9049783"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1. .6463
/organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="12"
/map="12q12-q13"
/tissue_type="thyroid"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complement(19, .447)
/rpt_family="Alu"
/rpt_type=dispersed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   469. .561
/rpt_family="MIR"
/rpt_type=dispersed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                                                                     AF250226.1 GI:9049782
                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 6463)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 6463)
                                                                                                                    rccreagractic 2448
                                                                               1800 TCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               thyroid tissues
                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20435313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10978539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                      Homo
                                                                                                                                                                                RESULT 6
AF250226
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                      2436
                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
```

```
1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2111
                                                                                                                                                                                                                                                                                                                                                                                                                                     1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1452 TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTTGA 1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1332 ACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTCTCGCAGCAGCAGCCCGC 1393
                                                                                                                                                                                                                                                                                                                             125 TCCCCATCCGCATGCGGGCTGCCGTCATCAGCGCCTTCTCCACCTTGCATTTGA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1932 AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCCCTCTGGGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCC 124
                                                                                                                           Gaps
                                                                                                                                                                64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1152 AGATGAAAGAAGACATCAACACAAAAAAAAGAAGACATGATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1992 IGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2052 ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   305 CTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365 ATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         542 CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2112 TGGGCATCCACAGCGGGGGGGGGGTGCGGGGGGTCCTTGGCGTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                5 ACGIGGIGCTGGGCATCCTGGCGGCAGIGCAGGTCGGGGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245 TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    425 AGATGAAAGAAGACATCAACACAAAAAAAAAGAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      482 AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         602 AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            662 TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               722 ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAAACATGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGGCATCCACAGCGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTGTGGTCCAATGATGTGTGCCCTGGCCAACCACATGGAAGCAGGAAGCCGGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .,
E
                                                                                  Length 6463;
                                                                                                                       20; Indels
                                                                                ٠,
د
                                                                                  ВВ
                                                                                                                       0; Mismatches
                   1533
                                                                         Score 1763;
Pred No. 0;
GVVKVKGKGEMTTYFLNGGPSS"
                   1871
                                                                              97.3%;
98.7%;
                   1795 c
                                                                                                                       Matches 1788; Conservative
```

(ns)

2;

JOURNAL

```
1441
                                                                         2471
                                                                                                                                                                                                                                          2771
                                                                                                                                                                                                                                                                                                                                          2951
                                                                                                                                                                                                                                                                                                                                                                                          3131
                                                                                                                         GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG 1261
                                                                                                                                                                                                                                                                                         TGAICTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC 1561
                                                                                                                                                                                                                                                                                                                                                         TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG 1681
                                                                                                                                                                                                                                                                                                                                                                                                                          ATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGCCACCATGCCCACCTGCAGCTTTC 1801
                                                                                                                                                                                                                                  AGAGAGAGATTTGAGAAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                         ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                 GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTG
                                                                 CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGGG
                                                                                                                                                          ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                          AGAGAGGATCTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                         GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                  TTGCCTGTGCCCTGTTGGTCTTCTGCTTCTGCTTCATCCAGCTTCTAATTTTCCCAC
                                                                                                                                                                                                                                                                                                 3142
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAGTACTTC
       2292
                                       2352
                                                        1082
                                                                                                                                         2532
                                                                                                                                                                         2592
                                                                                                                                                                                                                                                                                                                                        2892
                                                                                                                                                                                                                                                                                                                                                                        2952
                                                                                                                                                                                                                                                                                                                                                                                         1682
                                                                                                                                                                                                                                                                                                                                                                                                         3012
                                                                                                                                                                                                                                                                                                                                                                                                                          1742
                        1022
                                                                       2412
                                                                                                        2472
                                                                                                                         1202
                                                                                                                                                         1262
                                                                                                                                                                                          1322
                                                                                                                                                                                                          2652
                                                                                                                                                                                                                         1382
                                                                                                                                                                                                                                         2712
                                                                                                                                                                                                                                                                         2772
                                                                                                                                                                                                                                                                                         1502
                                                                                                                                                                                                                                                                                                         2832
                                                                                                                                                                                                                                                                                                                         1562
                                                                                                                                                                                                                                                                                                                                                         1622
                                                                                                                                                                                                                                                                                                                                                                                                                                          3072
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3132
                                                                                          1142
                                                                                                                                                                                                                                                          1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 7
AX189768
       8
                                                                     q
                                                                                                                                      g
                                                                                                                                                                     g
                                                                                                                                                                                                      g
                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                      g
                       ò
                                       g
                                                      δ
                                                                                        δý
                                                                                                    QQ
                                                                                                                    Q
                                                                                                                                                        ò
                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                       Οý
                                                                                                                                                                                                                                                                                                                                                                                                                         Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

1076 1136 1196 1376 1436 1496 1197 ATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCTTGAATGAGCTCTTTGCCCGGTTTGA 1256 362 422 479 539 629 779 839 716 176 182 242 896 302 926 Gaps 62 GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA AGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGAATGTGAACATGCG GCGCAGCCCCTCTGCGGGCCTCTGGTGCTTTTGTATACATCGCATACACGCT CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT TGTGCTGCTGCTCCTCTGCACCACCACGTCATTAGCATCTGCACACACTATCCAGCAGGGT 897 TGTGCTGCTGTTCCTCTGCACCAACGTCATTGGCATCTGCACCACTATCCAGCAGGT GTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA GGAGATGAAAGAAGACATCAACACAAAAAAAAAGAAGAC---ATGTTCCACAAGATCTACAT ATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGA CAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTG TGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGT CGTGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTT 1437 TGTGGGCATCCACAGCGGACGTGTGCATTGCGGCGTCCTTGGCCTACGGAAATGGCAGTT CGATGTGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGG GCATGAGAATCGGCAGCAGGAGCGGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT 9 Length 9 77; DB ų Score 1657.8; Pred. No. 0; 0; Mismatches 1657.8; No. 0; 176 /note="Modified AC-VI" 1036 c 1067 g 0; Query Match 91.5%; Best Local Similarity 95.4%; Matches 1730; Conservative ø sonrce BASE COUNT 480 1137 540 63 423 1077 720 123 837 243 303 183 957 363 780 FEATURES ORIGIN Dp δ g δ g δ g οy g 염 ò g δy QQ q δy g qq a QQ g ò δ ò QΥ ΩŸ δy g Óγ

08-AUG-2001

PAT

linear

DNA

3582 bp WO0148164

AX189768 Sequence 12 from Patent AX189768 AX189768.1 GI:15143140

DEFINITION ACCESSION VERSION KEYWORDS

LOCUS

ORGANISM

SOURCE

AUTHORS TITLE REFERENCE

synthetic construct.
synthetic construct
artificial sequences.
1 (bases 1 to 3582)
Hammond, H. K. and Gao, M.
Gene therapy for congestive heart failure

g à

900

1614 1020 1674 1080 1734 1140 1794 1200

q

Q

Q g οŽ g δ g οy

οy

960

à g οy 1260 1914 1320 1974 1380 2034 1440 2094

Dp

δ В οŽ

1854

```
/GOGOD_STATE_2
/GOGOD_STATE_2
/GOGOD_STATE_2
/GOGOD_STATE_2
/GOGOD_STATE_2
/GOGOD_STATE_2
/GOGOD_STATE_2
/GOGOD_STATE_2
/GOGOD_STATE_3
/GD_XTE_1 id="BAA24852.2"
/GD_XTE_1 id="BAA24852.2"
/GD_XTE_1 id="BAA24852.2"
/GD_XTE_1 id="BAA2485CBACGTARTRGCRAGGCTGTRYNGSCLADADAPCRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGCTARTRAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
Submitted (06-OCT-1997) Osamu Ohara, Kazusa DNA Research Institute,
Laboratory of DNA Technology; Yana 1532-3, Kisarazu, Chiba
292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp, Tel:+81-438-52-3913,
                                                                                                                                                              Ishikawa, K., Nagase, T., Nakajima, D., Seki, N., Ohira, M., Ohyadima, H., Ingaka, A., Kotani, H., Nomura, N. and Ohara, Prediction of the coding-sagnences of unidentified human genes. VIII. 78 new cDNA clones from Dean which code for large proteins
                                                                                    Euteleostomi;
Homo.
          SK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /sex="male"
//tissue_type="brain"
//clone_lib=_pBluescriptII SK plus"
//note="This sequence was obtained by subcloning of the fragments derived from two cDNA clones (1 - 1352 was derived from pg00161 and 1353 - 5877 was derived from h01205).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      833
sapiens male brain cDNA to mRNA, clone_lib:pBluescriptII clone:hh01205s1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGTGGTGCTGGCCATCCTGGCGGCGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fax:+81-438-52-3914)
On May 9, 2002 this sequence version replaced gi:2887418.
Sequence updated (05-Jan-1998).
                                                                                    Eukaryota, Metazoa, Chordata; Craniata, Vertebrata, E
Mammalia, Eutheria, Primates, Catarrhini, Hominidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1604.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
1. 5877
Acrganism="Homo sapiens"
(db.xref="taxon:9606"
/clone="hh01205s1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1335
                                                                                                                                                                                                                                                                                              4 (5), 307-313 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1782 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .5877
/gene="KIAA0422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="KIAA0422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GEMTTYFLNGGPSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88.5%;
llarity 98.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 5877)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <1. 3484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1612 c
                                   plus clone:hh
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                             VIII. 78 in vitro
                                                                                                                                                                                                                                                                                                   DNA Res.
                                                                                                                                                                                                                                                                                                                                                                                                      Ohara, O.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1148
                                                                                                                                                                                                                                                                                                                                                       9455477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Simi
Matches 1628;
             Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                 ORGANISM
                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                      MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                   JOURNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
          SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRI 10-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1559
                                                                                                                                                                                                                                                                                                                                                                             ACGGCCAACTCCATGGAAGGACTGCCCCGCTGCTTCTTCTCCCG 1793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCAT
                                                                                                                                                                                                                                             CCTGGGCGCCAGCCAGAAACGGAAAAGAGAAAAGGCATGCTGGCCAAGCTGCAGCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGAGTTCCTGAGCCGTGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGGTTTTTGCTCACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGGCTTCGGAGCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTT
                                   CCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCC
                                                                                                                                                                                                                                                                                                                                               TCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCTGCTTCATCCAGCTTCTAATTTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ### 5877 bp mRNA Homo sapiens KIAA0422 mRNA, partial cds. AB007882.2 GI:20521044 KIAA0422.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTGAGTACTTC
```

2154 1560 2214 1620 2274

셤

ð g ŏ g à

1500

ŏ g ò

q

DNA

ä

DEFINITION ACCESSION VERSION KEYWORDS

RESULT 8 AB007882 LOCUS

1740 2394 1800

q

δ q

2454

2334

00000 00000
CCCCATCCGCATGCGG CTTGGCCTGGCACTT
rgcrgriccr rgcrgriccr
AGCGCCAGGCCTTT
GAATCGG GAATCGG
atgaargacatcaccacaaaaagaa
AAGCATGACAATGTCAG(
CAGTGCACTGCGCAGG
GCTGGCTGCGGAGAATCACT(
GTCAGGGTGCCGGAGGCCCGGGCCG
CATGATTGAGGCCATCT
SCATCCACAGGGGGGGGGGTGC
GTGTGGTCCAATGATG
CATCCACATCACTCGGGCAACACT
GTGGTGGCAAGCGCAACGCG
GCGCCAGCCAGAAACGG
CCAACTCCATGGAAGGCTGATG

```
3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotta, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Bukaryotta; Metazoa; Canivora; Fissipedia; Canidae; Canis.

1 (bases 1 to 4046)
Katsushika, S., Chen, L., Kawabe, J., Nilakantan, R., Halnon, N. J., Homcy, C. J. and Ishikawa, Y.
Cloning and characterization of a sixth adenylyl cyclase isoform: types V and VI constitute a subgroup within the mammalian adenylyl cyclase family
Proc. Natl. Acad. Sci. U.S.A. 89 (18), 8774-8778 (1992)
9240959
                1914 CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG 1973
                                                                                          2033
                                                                                                                                                        2093
                                                                                                                                                                                                       2094 AGAGAGATCTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG 2153
                                                                                                                                                                                                                                                    TIGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCACTTCTAATTTTCCCAC 1441
                                                                                                                                                                                                                                                                                                                 1501
                                                                                                                                                                                                                                                                                                                                  2214 ACTCCACCCTGATGCTTGGGATCTATGCCAGCATCTTCCTGCTGCTGCTGATCACCGTGC 2273
                                                                                                                                                                                                                                                                                                                                                                              TGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2334 GCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTCGCTTG 2393
1142 CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG 1201
                                                             1202 GCACCCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG 1261
                                                                                                                        1262 AFGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTCC 1321
                                                                                                                                                                                                                                                                                  2154 TIGCCIGIGCCCIGITGGICITCIGCTICATCIGCTICATCCAGCTICICATCTICCCAC 2213
                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTG 1621
                                                                                                                                                                                       AGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                             2034 AIGCCCGCAGCAITGATCAGCTGCGGAAGGACCAIGTGCGCGCGGTITCTGCTCCTCCCTTCC
                                                                                                                                                                                                                                                                                                                   ACTCCACCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 4; Length 4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84.3%; Score 1527.8; DB 4; llarity 91.0%; Pred. No. 0; Conservative 0; Mismatches 157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1...4046
/organism="Canis familiaris"
/db_xref="taxon:9615"
/tissue_type="cardiac muscle"
1206 c 1254 g 843 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTTTACTTCTGCCATTGCCAACATGTTC 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 1648; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 9
DOGADENCYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                         1322
                                                                                                                                                                                                                                                      1382
                                                                                                                                                                                                                                                                                                                   1442
                                                                                                                                                                                                                                                                                                                                                                                1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2394
                                                                                                                                                                                                                                                                                                                                                                                                                                             1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                            q
                                                             á
                                                                                         g
                                                                                                                      Qγ
                                                                                                                                                    g
                                                                                                                                                                                       οy
                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pp
```

1999 CCAAGGATCCAAGGATGCCAAGGATGCCAAGGATGCCAAGGATGCCAGGATGCCAGGATGCCAGGATGCCAGGATGCCAGGATGCCAGGATGCAGAGATGCAGAGATGCAGAGATGCAGAGAGATGCAGAGAGAG	OUNCE UNKNOWN. ORGANISM UNKNOWN. ORGANISM UNClassified REFERENCE I (bases I AUTHORS IShikawa,Y. TITLE Cloning and JOURNAL Patent: US FEATURES LOSS ISSUECE LOSS OUNCE 10. BASE COUNT 743 a ORIGIN	Query Match Best Local Similarity Matches 1643; Conserv Qy 5 ACGTGGTGCTGGGG
05 GCAGCCCTCTGGGGGCCTCTGGTGTTCTTTGTATACATGGATACACGCTCC 124	0y 902 GCATCCACATCACTGGGGAACACTGCAGTACTGAACGGGGACTACGAAGTGGAGCCAG 961 111111111111111111111111111111111111	OY 1082 GGGCCAACTCCATGGAAGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA 1141

PAT 06-FEB-1997 ? 2318 2258 GCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTG 1621 CCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG 1681 SCATCGCCAACATGTTCACCTGTAACCACACCCCCATCCGGACCTGTG 2438 GCCTGGATGCTCCCCTGTGTGAGGGACCATGCCCACCTGCAGCTTC 1801 1321 GCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC 1501 IGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCTGCAAGGTCTGTCCC 1561 GAATTTAACACCTGCTGACATCACTGCCTGCCACCTGCAGCAGCTCA 1741 TGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG 1381 GTIGGICITCIGCITCAICIGCITCAICCAGCITCIAAITTICCCAC 1441 Gaps GCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCCCGC 64 d characterization of a cardiac adenylyl cyclase 5578481-A 1 26-NOV-1996; ocation/Qualifiers .4046 TTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC 83.9%; Score 1519.8; DB 6; Length 4046; 90.7%; Pred. No. 0; ive 0; Mismatches 162; Indels 6; linear DNA 844 4046 bp from patent US 5578481. organism="unknown" 1202 c 1257 g GI:1820749 1 to 4046) rvative 2569

1	4 T	1 4	44 001	1 51	4 21	4 81	1 41	1	1 12	. 12	. 11	. п	. 11	. &	. 80	₽ 8	1 8	1
C 82	c 124 881	18	1	304	36	42	48	541	601	661 1421	721	781	841	901	961	102	108	114
	GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTGTATACATCGCATACACGCTC	TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTGA	TOTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG	TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT	CTCAGGGCCAGGCCTTTCAGGAGACCGGCAGTTACATCCAGGCCGGGTCCACCTGCAGC	ATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTATTGCCCCAGCACGTTGCCATGG	AGATGAAAGAAGACATCAACACAAAAAAGAAGAATGTTCCACAAGATCTACATAC 	AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT 	CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCGGGTTTGACA 	AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAGATCTTGGGGGGACTGTTACTACTGTG 	TGTCAGGGCTGCCGGAGCCCGGGCCGACCATGCCCACTGCTGTGTGGGGGAGATGGGGGTAG	ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG	TGGGCATCCACAGGGGGGGGGGGTGCACTGGGGTCCTTGGCTTGCGGAAATGGCAGTTCG 	ATGTGFGGTCCAATGATGAGCCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC	GCATCCACATCACTGGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG	GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTAGATGAGACTTTCCTCATCC	TGGGGCCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 	GGGCCAACTCCATGGAAGGGCTGATGCGGTTCCTGATCGTGCCTTCTCCCGGA
762	65	125	185	245	305	365 1122	425	482	542 1302	602 1362	662 1422	722	782 1542	842	902 1659	962 1719	1022 1779	1082
qq	Oy Dp	Oy Dp	yo da	Qy Db	oy Op	Qy Dp	Oy Op	Oy Db	Oy Db	Qy	Q.y Dp	Qy	Oy Dp	Oy Dp	Qy	o da	oy Db	Οy

```
ROD 27-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 3465)
Premont, R.T.
Premont, R.T.
adultiple mechanisms underlying desensitization of the liver adenylyl cyclases system. Structure and cAMP regulation of liver adenylyl cyclases
                                                                                                               2018
                                                                                                                                                                     2078
                                                                                                                                                                                                                                                                                                                                       2258
                                         1261
                                                                                                                                          1321
                                                                                                                                                                                                 1381
                                                                                                                                                                                                            2318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2438
1839 GGGCCAACTCCATGGAAGGCCTGATGCCACGCTGGGTGGCCGACCGCGCCTTCTTCCGGA 1898
                                                                                                                                                                                                                                                  1382 TTGCCTGTGCCCTGTTGGTCTTCTGCTTCTGCTTCATCCAGCTTCTAATTTTCCCAC 1441
                                                                                                                                                                                                                                                                                                                                                                  1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2319 GCAGCATCGTCCGCTCTCGGCCACACACACTGTGGTTGGCATTTTTTCACTTGCTAG 2378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2558
                                                                                                                                                                                                                                                                                                          ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC 1501
                                                                                                                                                                                                                                                                                                                                                                                                                     1562 GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTG 1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  '(bases I to 3465)
Premont, R.T., Jacobowitz, O. and Iyengar, R.
Lowered responsiveness of the catalyst of adenylyl cyclase to stimulation by GS in heterologous desensitization: a role for adenosine 3',5'-monophosphate-dependent phosphorylation
                                                                                                  1322 AGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                                                                                                                              1142 CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG
                                                                                  1202 GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                         1262 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1742 ATTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2139 TGGCCTGTGGGCTGTTGGCTTCTGCTTTATCCAGCTCCTGGTTTTCCCAC
                                                                                                                                                                                                                                                                                                                        1622 TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MUSADNICYC 3465 bp mRNA linear ROI
Mus musculus adenylyl cyclase type 6 mRNA, partial cds.
M96653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M96653.1 GI:191726
adenylyl cyclase type VI.
Mus musculus cDNA to mRNA.
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1802 CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ||||| ||||
2559 CTGAGTACTTC 2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
MUSADNLCYC
                                                     1899
                                                                                                             1959
                                                                                                                                                                  2019
                                                                                                                                                                                                                        2079
                                                                                                                                                                                                                                                                                                          1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
В
                            δλ
                                                     g
                                                                            ŏ
                                                                                                      ρp
                                                                                                                                      δ
                                                                                                                                                          g
                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                              Op
                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                     à
                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΟY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΟŊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
```

```
/evidence=experimental
/product="adenylyl cyclase, type 6"
/product="adenylyl"
/product="adenyl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 ACCTGGTGCTGGCGCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCAGCGGC 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTGCTGTTCCTCTGCACCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAGAATCGCCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
m
                                                                                                                                                                             variant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    216; Indels
                                                                                                                                                                           (UNC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80.0%; Score 1449.4; DB 10;
87.9%; Pred. No. 0;
  (6), 2774-2784 (1992)
                                                                                                                                                                           cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                       /organism="Mus musculus"
/db_xref="taxon:10090"
/cell_line="S49 lymphoma
1. .3465
                                                                                                                                                                                                                                           /EC_number="4.6.1.1"
/citation=[2]
/citation=[1]
/codon_start=1
                                                                     Location/Qualifiers
1. .3465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GEMTTYFLN"
998 C
Endocrinology 131
93076707
1332848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 1592; Conservative
                                                                                                                                                                                                                            /partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                       MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305
  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365
                                                                        FEATURES
                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
1213
                                                                                                                                                                                                                                                                                                                1513
                                                                                                                                                                                                                                                                                                                                                        1573
                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                      1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2113
                                                                                                                                                                                                           1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCAC 1441
          541
                                                                                 601
                                                                                                                           661
                                                                                                                                                                  721
                                                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                     961
                                                    1754 CCAAGGACTCTAAGGCATTCCGCCAGATGGGCATTGATGATCTAGCAAGACAACAGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1814 GTGCCCAAGATGCTCTGAACCCTGAAGATGAGGTGGATGAGTTCCTGGGCCGAGCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                           AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                         TGGGCATCCACAGCGGACGTGTGCATTGCGGCGTCCTTGGCCTACGGAAATGGCAGTTTG
                                                                                                                                                                                                                                                                                                                                     GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                TGGGCGCCCAGCAGAAACGGAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGCGCCCAGCCAAAAACGGAAAGAGGAGAAAGCCATGCTGGCCAAGCTTCAGCGGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCCAACTCCATGGAAGGACTGATGCCCCGCTGGGTTCCTGACCGTGCCTTCTCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1262 ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                                                    TGGCCATCCACAGGGGGGGGGGGGTGCGGGGGTCCTTGGGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                              ATGTGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG
                                         AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1202
                                                                                                                                                                                                                                                                                                                                                        1514
                                                                                                                                                                                                                                                                                                                                                                                                                      1022
                                                                                                                                                                                                                                                                                                                                                                                                                                        1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2054
425
                                         482
                                                                                 542
                                                                                                                                                                  662
                                                                                                                                                                                                                                                    782
                                                                                                                                                                                                                                                                         1394
                                                                                                                                                                                                                                                                                             842
                                                                                                                                                                                                                                                                                                                                     902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                Ω
                                        δý
                                                          pp
                                                                             Ω
                                                                                                  8
                                                                                                                         òγ
                                                                                                                                         염
                                                                                                                                                             δŏ
                                                                                                                                                                                   g
                                                                                                                                                                                                           δy
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

```
365
             1047
                                      1107
                                                              1167
                                                                                       1227
                                                                                                                1287
                                                                                                                                                                1407
                                                                                                                                                                                         1467
                                                                                                                                                                                                       842
                                                                                                                                                                                                                  1527
                                                                                                                                                                                                                                           1587
                                                                                                                                                                                                                                                       962
                                                                                                                                                                                                                                                                                1022
                                                                                                                                                                                                                                                                                                                                1142
                                                                                                                                                                                                                                                                                                                                                        1202
                                                                                                                                                                                                                                                                                                                                                                                 1262
                                                                                                                                                                                                                                                                                                                                                                                                                      2007
                          425
                                                  482
                                                                           542
                                                                                                    602
                                                                                                                             662
                                                                                                                                         1347
                                                                                                                                                     722
                                                                                                                                                                              782
                                                                                                                                                                                                                               902
                                                                                                                                                                                                                                                                                                        1082
                                                                                                                                                                                                                                                                                                                                            1827
                                                                                                                                                                                                                                                                                                                                                                                             1947
                                                                                                                                                                                                                                                                                                                                                                    1887
                                                                                                                                                                                                                                                                                                                                                                                                          1322
                                                                                                                                                                                                                                                                                                                                                                                                                                               2067
         셤
                         Oy
Db
                                                           음
                                                                           Qy
Db
                                                                                               Q
D
                                                                                                                       oy
Db
                                                                                                                                                   Q
Dp
 à
                                                                                                                                                                          οy
                                                                                                                                                                                      qq
                                                                                                                                                                                                      oy
Op
                                                                                                                                                                                                                           ΟÝ
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                            Q
Dp
                                                                                                                                                                                                                                                                                                   QΛ
                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                               δŽ
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                  ;;
                                                                                                                                                                       14-FEB-2001
                                                  1681
                                                                                                                                                                                                                                                                                                                                                                                                                                              926
                                                                                                                                                                                                                                                                                                                         746
                                                                                                                                                                                                                                                                                                                                                 908
                                                                                                                                                                                                                                                                                                                                      124
                                                                                                                                                                                                                                                                                                                                                               184
                                                                                                                                                                                                                                                                                                                                                                                       244
                                                                                                                                                                                                                                                                                                                                                                                                                304
                                                                                                                                                                                                                                                                                                                                                                                                                           986
                                                                                                                                                                                                                                                                                                                                                                                                                                        364
                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                             64
                                                                         TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACCCCCATACGGAGCTGTG
                                                                                                  ATTACTCTCTGGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                            TGATCTGTGCTGTGTTCTCTGTGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC
                               GCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTTG
                                                                                                                                                                                                                                                                                                             ACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGGGCGCTTTCGCAGACCCGG
                                                                                                                                                                                                                                                                                                                                                             TCCCCATCCGCATGCGGGCTGCCTCCAGCGGCCTGGGGCCTCTCCACCTTGCATTTGA
                                                                                                                                                                                                                                                                                                                                                                                      TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                               TGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                      CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                        PAT
                                                                                                                                                                                                                                                                                      4131;
                                                                                                                                                                                                                                                                                                 3;
                                                                                                                                                                                                                                     therefor
                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                     and uses
                                                                                                                                                                                                                                                                                     . 9
                                                                                                                                                                                                                                                                                    Score 1437.2; DB 6;
Pred. No. 3.2e-311;
); Mismatches 223;
                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                   ىد
                                                                                                                                                                                                                      1 (bases 1 to 4131)
Tang.W.-J. and Gilman, A.G.
Soluble mammalian adenylyl cyclase an
Patent: US 6107076-A 11 22-AUG-2000;
Location/Qualifiers
                                                                                                                                                                      31 bp c
6107076.
                                                                                                                                                                                                                                                                   924
                                                                                                                                                                     Sequence 11 from patent US 61
AR106659
AR106659.1 GI:12821190
                                                                                                                                                                                                                                                           /organism="unknown"
1190 c 1182 g
                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                .;
                                                                                                                                                                                                                                                                                    Query Match 79.3%;
Best Local Similarity 87.5%;
Matches 1584; Conservative
                                                                                                                                                                                                                                                      .4131
                                                                                                                                       2424
                                                                                                                           CTGAGGTGTTC 1812
                                                                                                                                                                                                                 Unclassified
                                                                                                                                  |||||||
CTGAGTACTTC
                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                    Unknown.
                                                                                                                                                                                                            Unknown
                                                                                                                                                                    LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                 BASE COUNT
ORIGIN
                                                                                                  1742
1502
            2114
                                    2174
                                                  1622
                                                             2234
                                                                                      2294
                                                                                                               2354
                                                                                                                           1802
                                                                                                                                       2414
                                                                                                                                                         RESULT 12
AR106659
                                                                                                                                                                                                                              AUTHORS
TITLE
                         1562
                                                                         1682
                                                                                                                                                                                                                                                                                                                        687
                                                                                                                                                                                                                                                                                                                                                 747
                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                                                                                                                                                                                                                         807
                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                  867
                                                                                                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                                                          927
                                                                                                                                                                                                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                                                                                                                                                                   987
                                                                                                                                                                                                                                                 FEATURES
                                                                                  g
ð
           g
                                                           a
                                                                                                           g
                                                                                                                                    g
                        ò
                                  g
                                                ò
                                                                         ŏ
                                                                                                à
                                                                                                                         ò
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1946
                                                                                                                               1226
                                                                                                                                                                                   1286
                                                                                                                                                                                                                                      1346
                                                                                                                                                                                                                                                                                         1406
                                                                                                                                                                                                                                                                                                                                                                                                1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1501
                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                    781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
424
                                                                                                                                                         601
                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                ATGAGAATCGGCAGCAGCAGGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                    AGATGAAAGAAGACATCAACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                        AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                      CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                       TGGGCATCCACAGCGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                           ATGTGTGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGCGCCAGCCAGAAACGGAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1707 TAGGAGCCAGCCAGAAACGGAAAGAGAGAGAAGGCCATGCTGGTCAAGCTGCAGCGGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCACCCAAGATGCCCTGAACCCTGAGGATGAGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTCCACCCTGATGCTTGGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                    ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
```

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /evidence-experimental
/product="adenylyl cyclase type VI"
/product="adenylyl cyclase type VI"
/db_xref="G1:202719"
/translation="MPLPVARSGSGRSSMSWFSGLLVPKVDERKTAWGERNGGKRPRO
ATRARGFCAPRYMSCLKNVEPPSPTPAARTRCPWQDEAFIRRAGPGRGVELGLRSVAL
GFDDTEVTTPMGTAEVAPDTSPRSGFSCWHRLAQVFQSRQFPSAKLERLYQRYFFQMN
                                                                                                                                                                                                                                                                                                                                                                                                     ROD 27-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 4131)
Premont, R.T., Chen, J., Ma, H.W., Ponnapalli, M. and Iyengar, R.
Two members of a widely expressed subfamily of hormone-stimulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata, Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Multiple mechanisms underlying desensitization of the liver adenylyl cyclase system. Structure and cAMP regulation of liver adenylyl cyclases
                                                                                                                                                                                                 אמארת אואר אוארא אוארא אוארא אוארא אוארא אוארא אוארא אואראר Rattus norvegicus adenylyl cyclase type VI mRNA, complete cds
M96160
                                                                                                                                                                                                                                                                                                                                                                                                                                       M96160.1 GI:202718
adenylate cyclase; adenylyl cyclase type VI.
Rattus norvegicus (strain Sprague-Dawley) adult liver, kidney
heart cDNA to mRNA.
TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                            TCATCTGTGCTGTGTGCTCTGTGGGTCTTTCTTCCCCCAACGCCCTGCGCGCCTGTCCC
                                                                                           GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTG
                                                                                                                                                                                                                                                     ATTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      89 (20), 9809-9813 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               heart"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /strain="Sprague-Dawley"
/db.xref="taxon:10116"
/t1ssue_type="liver, kidney,
/dev_stage="adult"
14. .3556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /EC_number="4.6.1.1"
/citation=[2]
/citation=[1]
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Proc. Natl. Acad. Sci. U.S.A.
93028552
1409703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 4131)
Premont, R.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        adenylyl cyclases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus norvegicus
                                                                                                                                                                                                                                                                                                                         CIGAGIACII 2496
                                                                                                                                                                                                                                                                                                         CTGAGGTGTT 1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Thesis (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
             2127
                                        1502
                                                               2187
                                                                                           1562
                                                                                                                     2247
                                                                                                                                                1622
                                                                                                                                                                         2307
                                                                                                                                                                                                 1682
                                                                                                                                                                                                                                                     1742
                                                                                                                                                                                                                                                                              2427
                                                                                                                                                                                                                                                                                                         1802
                                                                                                                                                                                                                                                                                                                                 2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE
PUBMED
                                                                                                                                                                                                                            2367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                    RATADCYB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
             g
                                                                                                              Q
                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                g
                                        ò
                                                               g
                                                                                          ŏ
                                                                                                                                             ŏ
                                                                                                                                                                   셤
                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                   QΫ́
                                                                                                                                                                                                                                                                                                       ò
```

```
SMWYOSYVUCILAANOPGALAANPREPARTATION TO THE TOTAL TOTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1047 ATGAGAATGGACAGCAGGAACGGCTGCTGCTGTCGGTGTTGCCCCAGCATGTTGCCATGG 1106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1107 AAATGAAAGAGATATCAACACAAAAAAGGAAGACATGATGTTCCACAAGATTTACATCC 1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGAGAATCGGCAGCAGCAGCGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAG 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5 ACGTGGTGCTGGCGATCCTGGCGGCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCCCGC 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCAGGGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATGAAAGAAGACATCAACACAAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACAACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
P9.3%; Score 1437.2; DB 10; Length 4131;
Best Local Similarity 87.5%; Pred. No. 3.2e-311;
Matches 1584; Conservative 0; Mismatches 223; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  662
```

```
source
                                             DEFINITION
ACCESSION
VERSION
                                                                              ORGANISM
                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                   1027
                                                                                                                                                                                                                                                                                                                                                                            1087
                                                                                                                                                                                                                                                                                                                                                                                                       1147
       2487
                          RESULT 14
AX305965
LOCUS
                                                                                                                                                                                                                   727
                                                                                                                                                                                                        S
                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                             787
                                                                                                                                                                                                                                                          125
                                                                                                                                                                                                                                                                      847
                                                                                                                                                                                                                                                                                   185
                                                                                                                                                                                                                                                                                               907
                                                                                                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                                                                                365
                                                                                                                                                                                                                                                                                                                                                                                          425
                                                                                                                                                                                                                                                                                                                                                                                                                    482
                                                                                                                                                                                                                                                                                                                                                                                                                                1207
                                                                                                                                                                                                                                                                                                                                                                                                                                              542
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      602
                                                                 KEYWORDS
SOURCE
                                                                                                                    JOURNAL
                                                                                                                                 FEATURES
        合
                                                                                                                                                                                                        δ
                                                                                                                                                                                                                   ద
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                             ΩD
                                                                                                                                                                                                                                                                                                                     <u>a</u>
                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                          Op
                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      òγ
                                                                                          1646
             1466
                                       1526
                                                                                                                               1201
                                                                                                                                                                                                 1886
                                                                                                                                                                                                                         1946
                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                               1381
                                                                                                                                                                                                                                                                            2066
                                                                                                                                                                                                                                                                                         1441
                                                                                                                                                                                                                                                                                                      2126
                                                                                                                                                                                                                                                                                                                   1501
                                                                                                                                                                                                                                                                                                                               2186
                                                                                                                                                                                                                                                                                                                                                                      1621
                                                                                                                                                                                                                                                                                                                                                                                                             2366
                                                                                                                                                                                                                                                                                                                                                                                                                          1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2486
                                                                                                      GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACCATTGAGACTTTCCTCATCC 1021
                                                                                                                                                                                                                                                                                                                                            1561
                                                                                                                                                                                                                                                                                                                                                                                               1681
 781
                          841
                                                    901
                                                                             961
       TGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                            GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                            GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG
                                                                                                                                                                                                                                    ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTGCTCACGTTCC
                                                                                                                                                                                                                                                              AGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG
                                                                                                                                                                                                                                                                                                                        TGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC
                                                                                                                                                                                                                                                                                                                                                  GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCCATCTTTCCGTCCTGCTTG
                                                                                                                                                                                                                                                                                                                                                                            TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACCCCCCATACGGAGCTGTG
ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACATGTGAATGTGAACATGCGCG
                                                    ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                         GGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA
                                                                                                                                                                                   CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGG
                                                                                                                                                                                                                                                                                         TTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCAC
                                                                                                                                                                                                                                                                                                                 ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CIGAGGIGIT 1811
             1407
                                      1467
                                                                                        1587
                                                                                                                  1647
                                                                                                                                                                      1767
                                                                                                                                                                                   1142
                                                                                                                                                                                                            1202
                                                                                                                                                                                                                        1887
                                                                                                                                                                                                                                                 1947
                                                                                                                                                                                                                                                                           2007
                                                                                                                                                                                                                                                                                        1382
                                                                                                                                                                                                                                                                                                                 1442
722
                          782
                                                   842
                                                               1527
                                                                                                                                                         1082
                                                                                                                                                                                               1827
                                                                                                                                                                                                                                     1262
                                                                                                                                                                                                                                                              1322
                                                                                                                                                                                                                                                                                                    2067
                                                                                                                                                                                                                                                                                                                              2127
                                                                                                                                                                                                                                                                                                                                           1502
                                                                                                                                                                                                                                                                                                                                                        2187
                                                                                                                                                                                                                                                                                                                                                                     1562
                                                                                                                                                                                                                                                                                                                                                                                  2247
                                                                                                                                                                                                                                                                                                                                                                                               1622
                                                                                                                                                                                                                                                                                                                                                                                                           2307
                                                                                                                                                                                                                                                                                                                                                                                                                        1682
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1742
                                                                            902
                                                                                                      962
                                                                                                                                                                                                                                                                                                                                                                                                                                     2367
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1802
            g
                                     Pp
                                                              g
                                                                                                                                        g
                                                                                                                                                                   임
                                                                                                                                                                                            셤
                                                                                                                                                                                                                     g
ò
                          ò
                                                  οy
                                                                            à
                                                                                     g
                                                                                                     οy
                                                                                                                Q
                                                                                                                               ò
                                                                                                                                                        ŏ
                                                                                                                                                                              ŏ
                                                                                                                                                                                                            δý
                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                              DD
                                                                                                                                                                                                                                                            ογ
                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
PAT 11-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ä
                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCTGTGAAGCAGCTCGGTGCCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGCGCCTGGGCCTCTCCACCTTGCATTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITIGGCCTGGCAGCTCAACAGCGACCCCTTCCTTTGGAAGCAGCTCGGTGCTAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATGAAAGAAGACATCAACACAAAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACG16G1GC1GGGCA1CC1GGCGGCAG1GCAGG1CGGGGGGCGC111TCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAGCCCTCGGCGGCCTTTGGTGCCCCGTGTTCTTCGTCTACATCACCTACACTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGG
                                                                                                                                                                                                                                                                           Ishlkawa,K., Asai,S., Takahashi,Y., Nagata,T. and Ishii,Y. Method for examining ischemic conditions
Patent: WO 0188188-A 716 22-NOV-2001;
School Juridical Person Nihon University (JP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 5841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1431.8; DB 6; Length
Pred. No. 5.1e-310;
0; Mismatches 217; Indels
                                                                                              linear
                                                                                              DNA
                                                                                              5841 bp
from Patent WO0188188.
                                                                                                                                                                                                                                                                                                                                                                                         /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:10090"
1558 c 1673 g 1
                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                AX305965.1 GI:17645322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 79.0%;
Best Local Similarity 87.7%;
Matches 1588; Conservative
 2496
                                                                                          AX305965
Sequence 716 f
AX305965
                                                                                                                                                                                                        musculus
                                                                                                                                                                                   house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                  ಹ
CTGAGTACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                1214
                                                                                                                                                                                                        Mus
```

```
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                  JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                        AUTHORS
TITLE
         1742
                                             1802
                                                               2524
                                                                                          RESULT 15
MUSADCYC
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65
                                                                                                                                                                                               REFERENCE
                                                                                                                                                KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                               FEATURES
                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                             δď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
         ă
                                                                                                                                                                                                                                                                               GGGCCAACTCCATGGAAGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGA 1141
                                                                                                                                                                                                                                                                                                                   TGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGCCAACTCCATGGAAGGACTGATGCCCCGCTGGGTTCCTGACCGTGCCTTCTCCCGGA 1863
                                                                                                                                                                                                                                                                                                                                                         GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACG 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ITGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCAGCTTCTAATTTTCCCAC 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTGGCTGCGGAGAATCACTGTCTGAGGATCAAGATCTTAGGAGACTGTTACTACTGCG 1386
                                                              GCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACCATTGAGACTTTCCTCATCC 1021
                TGTCAGGGCTGCCGGAGCCCGGCCGACCATGCCCCTGTGTGGAGATGGGGGTAG
                                                                                                                                                                                                                TGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTG
                                                                                                                                                                    GCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG
                                                                                                                                                                                                                                           TGGGCGCCCAGCCAGAAACGGAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATCTGTGCCGGTGCTCCTGCGGTTCTTCTTCCCCAAGGCCCTGCAACGCCTGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGGCATCTTTCCGTCCTGCTTG
                                                     ACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG
                                                                                           TGGGCATCCACAGCGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCG
                                                                                                                               ATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                            ATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCC
                                                                       1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2164
                                  1387
                                                                                                            1507
                                                                                                                                                                                     1624
                                                                                                                                                                                                                         1684
                                                                                                                                                                                                                                           1022
                                                                                                                                                                                                                                                            1744
                                                                                                                                                                                                                                                                               1082
                                                                                                                                                                                                                                                                                                  1804
                                                                                                                                                                                                                                                                                                                                      1864
                                                                                                                                                                                                                                                                                                                                                        1202
                                                                                                                                                                                                                                                                                                                                                                           1924
                                                                                                                                                                                                                                                                                                                                                                                             1262
                                                                                                                                                                                                                                                                                                                                                                                                               1984
                                                                                                                                                                                                                                                                                                                                                                                                                                  1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                   2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2404
1327
                  662
                                                     722
                                                                                          782
                                                                                                                               842
                                                                                                                                                1567
                                                                                                                                                                   902
                                                                                                                                                                                                       962
g
                                  g
                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                Qγ
                                                                   g
                                                                                                         q
                                                                                                                                            g
                                                                                                                                                                               g
                                                                                                                                                                                                     ö
                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                           δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                     οχ
                                                                                          ò
                                                                                                                             ò
                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                  ò
```

```
96. .3593
/CCOURDEDERS 14.6.1.1"
/COGOD_STATE 1910
/COGOD_STATE 1910
/COGOD_STATE 1910
/COGOD_STATE 1910
/COCHEMICAL 1910
/COCHEMICAL 1910
/COCHEMICAL 1910
/COCHEMICAL 1910
/CTATE 1910
/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AIFDNYDLLLGVHGLASSNETFDGLDCPAVGRVALKYMTPVILLVFALALYLHAQOVE
STARLDFLMKLQATGEKEBMEELQAYNRRLHHILFKDVAAHFLARERRNDELYYOSC
ECVAVMFASIANFSEFVELBANNEGVECLRLLNEIIADFDEIISEBFFRQLEKIKTI
GSTYMAASGLIASTFDOVGREHITALADYAMRLMEOMKHINBHSFNNFOMKIGLNMGP
VVAGVIGARKPQYDIMGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECRGVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ROD 27-APR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 5841)
Yoshimura,M. and Cooper,D.M. Cloning and expression of a Ca(2+)-inhibitable adenylyl cyclase from NCB-20 cells
                                       ATTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTC 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGCCCTTGCGGGCCTTTGGTGCCTGTGTTTGTATACATCGCATACACGCTCC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 ACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1431.8; DB 10; Length 5841;
Pred. No. 5.1e-310;
0; Mismatches 217; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (15), 6716-6720 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  p mRNA linear mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       M9342.1 GI:191690
adenylyl cyclase; adenylyl cyclase type VI.
Mus.musculus cDNA to mRNA.
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
/db_xref="taxon:10090"
/cell_line="NCB-20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Proc. Natl. Acad. Sci. U.S.A. 89
92357702
1379717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         type VI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KVKGKGEMTTYFLNGGPSS"
1558 c 1673 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
1..5841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              р
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mouse adenylyl cyclase
M93422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 79.0%;
Best Local Similarity 87.7%;
Matches 1588; Conservative 0
                                                                                                                                                                 CTGAGGTGTTC 1812
                                                                                                                                                                                                                      ||||||
CTGAGTACTTC 2534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MUSADCYC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1214
```

-	CAGCCCCTCGGCGGCCTTTGGTGCCCCGTGTTCTTCGTCTACATCACCTACACTCTT	4
	CATCCGCAFCCGGCTGCCTCAGCGGCCTGGGCCTCTCCACTTGGATTGA	184 906
TCTTG TTTTG	GCCTGGCAACTTAACCGTGGTGA) 	244 966
TGCTC 	CTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGT 	304 1026
CTCAGC(SCCAGGCCTTCAGGAGACCCGC	364 1086
ATGA ATGA	ATGAGAATCGGCAGCAGCAGCGCTGCTGCTGGGTATTGCCCCAGCACGTTGCCATGG 	424 1146
AGATO AGATO	IGAAAGAAGACATCAACAAAAAAAGAAGAATGTTCCACAAGATCTACATAC 	481 1206
82 AGA 11 07 AGA	GBAGCATGACAATGTCAGCTGTTTGCAGACATTGAGGCTTCACCAGCCTGGCAT 	541 1266
8=8	CCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACA 	601 1326
AGCTC 	TGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTG 	661 1386
767 167	GTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGTGTGTG	721 1446
ACATO ACATO	TGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCG 	781 1506
766 166	SGCATCCACAGGGGGGGGGGGGGGGGGGGGGGGTTGGGGAAATGGCAGTTGG 	841 1566
42 ATG 67 ATG	GTGTGGTCCAATGATGTGACCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCC 	901 1623
GCATO GCATO	YTCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAG 	96 1 1683
0 – 0 - 0 - 0	GIGGIGGCAACGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCC	1021 1743
750 1 - 1	GGGCGCCAGCCAGAAACGGAAAGAGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTC 	1081 1803
999	GGCCAACTCCATGGAAGGCTGATGCCGCGATGGTTCCTGATGGTGCTTCTCCGGA 	1141 1863
CCA CCA	CCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAGACAACCGGG 	1201 1923

```
1983
                                                     2043
                                                                                                           1441
                                                                                                                                                1501
                                                                                                                                                                   2223
                                                                                                                                                                                                      2283
                                   1321
                                                                     2104 TCGCCTGTGCCCTCCTGGTTTTTTGCTTCATCTGTTTTATCCAGCTCCTTGTGTTCCCAT 2163
                                                                                                                                                                                   1502 TGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCC 1561
                                                                                                                                                                                                                                   1742 ATTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTC 1801
                                                                                                                                                                                                                                                                                                                                            1562 GCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTG 1621
GCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCG 1261
          1924 GTGCCCAAGATGCTCTGAACCTGAAGATGAGGTGGATGAGTGCTTCCTGGGCCGAGCATCG
                                  TTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCAC
                                                                                                                                                         2164 ACTCCACCCGGATACTCGGGATTTATGCCGCTATCTTCCTGCTGTTGCTGGTCACTGTGC
                                                                                                                                                ACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGC
                                                                                                                                                                                               1802 CTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                    11111 | 111
2524 CTGAGTACTIC 2534
1202
                                                                                                           1382
                                                                                                                                                1442
                                                                                                                                                                                                                                          2284
                                                                                                                                              oy
oy
oy
δ
              g
                                  Q Q
                                                                     Oy
Oy
Ob
                                                                                                                                                                                                                      QY
Db
                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                           d
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                        òγ
```

Search completed: March 1, 2003, 02:24:10 Job time : 3154.21 secs

CM1-FN010 QV0-FN018 603397792

BE840138

BE840138

BG004182 BQ370134 BE001572 BM811640 BC028085 BI739363 BM548851 BQ370137

BQ881456 AGENCOURT BF35986 AGENCOURT BF35986 AGENCOURT BC001312 QV4-GN012 BE0001572 PM2-BN008 BM811640 AGENCOURT BC028085 Homo sapi BM739363 G03359680 BM548851 AGENCOURT BQ370137 QV4-GN012 AL558455 AL58455 BM558455 AL58455 BM607340 AGENCOURT BC20148 Homo sapi BC20148 Homo sapi BR616087 BB616087 BM616087 BB616087 BM963626 G0208826 BM963626 UT-M-E00-BE546643 G01075694 BF98289 G02308826 BF111874 BC1075694 BF91742 AL118754 BF31111 AM2576006 AL913111 AM2576006 AL914903 tr27c01.x BG53111 AM261509.x BB63676 BB863676 BB63676 BB863676 BB63676 BB863676 BB63677 BB863677 BB636413 hv655h09.x BC295901 G02393432 BBC04413 hv655h09.x BC295916 G02393432

AL558455 BN8020140 BC020148 BC020148 BC42310 BF582692 BI823692 BB616087 BB616087 BB616087 BB616087 BB616087 BB616087 BB616087 BB618764 BF982389 BF988269 BF988269

```
Bukaryotta; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (Bases 1 to 676)
Diass N. Lo 676)
Diass N. L., Garcia Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagai, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Goldman, G.H., Carvalho, A.F., Matsukuma, A., Baia, G.S., Simpson, D.H., Brunstein, A., deoliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare, M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and Simpson, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence tags
Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
20202663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BE840188 1100800-335-d08 FN0181 Homo sapiens CDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BE840188
BE840188.1 GI:10272566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brazil
Tel: +55-11-2704922
Fax: +55-11-2707001
                                                                  Homo sapiens
  human.
393.2
392.8
387.8
377
                                                                                                            351.8
3447.2
3447.2
3445.8
3132.4
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
3116.2
316.2
316.2
316.2
316.2
316.2
316.2
316.2
316.2
316.2
316.2
                                                                                                                                                                                                                                                                                                                                                                                                                                271.2
260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             247.8
243.4
238.6
232.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2216
2216
2208
2208
2201
199
199
196
196
182
180
180
180
180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    218.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 1
BE840188
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE840188 QV0-FN018
BG993320 MR3-HT099
BG872335 602792616
BM090325 505523 MA
BQ180663 UT W-EX0-
A1905602 CM-BT094-
                                                                                                                                                  February 28, 2003, 21:14:01; Search time 1740.16 Seconds (without alignments) 16864.108 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                            1 gttaacgtggtgctggggcat......gcagctttcctgaggtgttc 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                        32308132
                  GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                           16154066 segs, 8097743376 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                     hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Maximum Match 100%
Listing first 45 summaries
                                                                                                            nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE840188
BG993320
BG872335
BM090325
BQ180663
A1905602
                                                                                                                                                                                                                                                                                                                                      IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_gss_other:*
em_gss_pro:*
em_gss_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_gss_fun: *
em_gss_mam: *
em_gss_mus: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_gss_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_gss_inv:*
em_gss_pln:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_gss_vrt:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_est5:*
em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11: em_estba:*
: em_estbum:*
31: em_estbum:*
51: em_estfmu:*
62: em_estpo:*
63: em_estpo:*
64: em_estpo:*
65: em_estpo:*
66: em_estpo:*
67: em_estpo:*
68: em_ftc:*
68: em_ftc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          113
                                                                                                                                                                                                                                     US-09-750-240-3
1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_estom:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dp_gss:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  676
581
565
525
682
442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of
                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                      Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  593.4
4663.4
442.4
418.6
393.2
                                                                                                          OM nucleic
                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                         ou:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     426459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No.
                                                                                                                                                                                                                                                 Title:
```

EST 22-SEP-2000

ALIGNMENTS

BJ104077 AV592196 BJ119637

A672242 BB863676

BG731141

mRNA sequence.

Mon

```
/note="Organ: prostate_normal; Vector: puc18; Site_1: SmaI site_2: SmaI; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwyg Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl=£t2=0V0-FN0181-100 Seq primer: puc 18 forward
High quality sequence start: 5
High quality sequence stop: 625.
Location/Qualifiers
1. 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    949 GAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAG 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTITICCTCATCCTGGGCGCCCAGAAACGGAAAGGAGAAAGGCATGCTGGCCAAG 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1069 CTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGT 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1189 AAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTG 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTG 1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGC 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1249 AGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTT 1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1309 TTGCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGC 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1369 TTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTT 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAATTTTCCCACACTCCACCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTG 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      182 GCCTTCTCCCGGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGC 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62 ACTTTCCTCATCCTGGGCGCCAGCCAGAAACGAAAGGGGGAAGGCCATGCTGGCCAAG 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                242 AAAGACAACCGGGGCACCCAAGATGCCCTGAACCTGAGGATGAGGTGGATGAGGTCCTG 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122 CTGCAGCGGACTCGGGCCAACTCCATGGAAGGCTGATGCCGCGCTGGGTTCCTGATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      542 CTAATCACCGTGCTGATCTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 12; Length 676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 593.4; DB 12;
Pred. No. 1.5e-131;
0; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGC 1583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="FN0181"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 32.7%;
Best Local Similarity 95.9%;
Matches 609; Conservative
                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              602
                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          å
```

```
/ub.ater_andulth="HT09999"
/dev_stage="Adult"
/dev_stage="Adult"
/dev_stage="Adult"
/dev_stage="Adult"
/note="Organ: head_neck; Vector: puc18; Site_1: Smal;
/note="Organ: head_neck; Vector: puc18; Site_1: Smal;
/note_2: Smal; A min1-library was made by cloning products
derived from ORESTES PCR (U.S. Letters Patent application
No. 196,716 - Ludwig Institute for Cancer Research)
profiles into the puc 18 vector. Reverse transcription of
tissue mRNA and cDNA amplification were performed under
low stringency conditions."
a 157 c 199 g 106 t 1 others
                                                                                                                                                                                                                                1 (bases 1 to 581)
Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R.,
Magai,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F.,
Goldman,G.H., Carvalho,A.F., Matsukuma,A., Baia,G.S., Simpson,D.H.,
Brunstein,A., deOliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
Simpson,A.J.
Shotgun sequencing of the human transcriptome with ORF expressed
                                       BG993320 581 bp mRNA linear EST 13-JUN-2001 MR3-HT0999-070201-003-h04 HT0999 Homo sapiens CDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ĥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?t1=MR3&t2=MR3-HT0999-070201-003-h04&t2=2001-02-07&t4=1)
Seq primer: puc 18 forward
High quality sequence stop: 581.
                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           623 GCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCC 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCTGGCCAACCACGTGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAA 922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACACAGCGGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCACTGCGGCGTCCTTGGCGTAAATGGCAGTTCGATGTGTGGTCCAATGATGTGA
                                                                                                                                                                                           Craniata; Vertebrata; Eutele
Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 581;
                                                                                                                                                                                                                                                                                                                                                                                                                       Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
20202663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 540.2; DB 13;
Pred. No. 8.3e-119;
0; Mismatches 9; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .581
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                       GI:14397390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tch 29.8%;
al Similarity 98.2%;
556; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: +55-11-2704922
Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                         sequence tags
                                                                                                                                                                         Homo sapiens
                                                                                                       BG993320.1
                                                                                   BG993320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118
                                                                                                                                                   human,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                             DEFINITION
                                                                                 ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      863
                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                        AUTHORS
RESULT 2
BG993320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
CCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                911 TCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGA-AGTGGAGCCAGGCCGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGACATCAACACAAAAAAAAGAGGACATGATGTTCCATAAGATCTACATCAGAAGCATG
                                 491 ACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCA
                                                                                          CGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGC
                                                                                                                                                                               181 CGGAGAATCACTGTCTGAGGATCAAGATCTTAGGAGACTGTTACTACTGCGTGTCAGGGC
                                                                                                                                                                                                            TGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGGTAGACATGATTG
                                                                                                                                                                                                                                                                     731 AGGCCATCTCGCTGGTACGTGAGGTGACGTGTGAATGTGAACATGCGCGTGGGCATCC
                                                                                                                                                                                                                                                                                                                              GGCAAGCGCAACGCGTACCTCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Keele, J.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE
COMMENT
                                                                                                                                                  611
                                                                                                                                                                                                         671
                                                                                                                                                                                                                                                                                                                                                                                        851
                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
BM090325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                       8
                                                                                                                 q
                                                                                                                                                                            QQ
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                              δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οğ
                             ò
                                                                                         ò
                                                                                                                                               ŏ
                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /...organism="Mus musculus"
//strain="rybB/N"
//db_xref="taxon:10090"
//clone="IMAGE:4923890"
//clone="IMAGE:4923890"
//db_bost="DH10B (Tl phage-resistant)"
//note="Organ: salivary gland; Vector: pcMV-SPORT6; Site_1:
//note="Organ: Soli; Cloned unidirectionally. Primer: Oligo
dT. Average insert size 1:3 kb. Constructed by Life
// Technologies. Note: this is a NCI_CGAP Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ..
?:
                                                                                                                                                                                                                                                                                                                                                                                       565 bp mRNA linear EST 29-MAY-2001
Mus musculus cDNA clone IMAGE:4923890 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Rammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 565)
NIH-MGC http://mgc.nci.nih.gov/.
                                                                                                                                                               1043 AAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGC 1102
                                                                                                                                                                                                                        TGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAGGACTCCAAGGCCTTCC 1162
                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              434 AAGACATCAACAAAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATACAGAAGCATG 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: Jeffrey E. Green, M.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can lette://image.llni.gov
Plate: LLAM10845 row: p column: 03
4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 463.4; DB 12; Length
Pred. No. 2.1e-100;
O; Mismatches 46; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            High quality sequence start: 11
High quality sequence stop: 565.
Location/Qualifiers
                                                                                                                                                                                                                                                                                 GCCAGATGGGCATTGATGATTCCAGC 1188
                                                                                                                                                                                                                                                                                               BG872335
602792616F1 NCI_CGAP_SG2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
                                                                                                                                                                                                                                                                                                                                                                                                                                              BG872335.1 GI:14222875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25.6%; 91.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           house mouse,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                       RESULT 3
BG872335
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                     983
                                                                                                                                  376
                                                                                                                                                                                                                       1103
                                                                                                                                                                                                                                                                                 1163
                                                                         316
                                                                                                                                                                                                                                                    496
                                                                                                                                                                                                                                                                                                             556
                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                      g
                                                                                                                              q
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                            ŏ
                                                                                                   à
                                                                                                                                                            ŏ
                                                                                                                                                                                       q
                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                ŏ
```

EST 19-NOV-2001

565 994

910

480 696 540

850 420

790 360

670 240 730

180

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea; Bovolnae; Bos.

1 (bases 1 to 525)

Smith, T.P.L., Grosse, W.M., Freking, B.A., Roberts, A.J., Stone, R.T., Casass, E., Wary, J.E., White, J., Cho, T., Fahrenkrug, S.C., Bennett, G.L., Heaton, M.P., Laegreid, W.W., Rohrer, G.A., Chitko-McKown, C.G., Pertea, G., Holt, I., Karamycheva, S., Liang, F., Quackenbush, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Single pass sequencing. Bases called and alt_trimmed with phred v0.980904.e. Vector identified by cross_match with the -minscore 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence evaluation of four pooled-tissue normalized bovine cDNA libraries and construction of a gene index for cattle Genome Res. 11 (4), 626-630 (2001)
BM090325 525 bp mRNA linear 50552 MRNA sequence. 50552 MARC 3BOV Bos taurus cDNA 5', mRNA sequence. BM090325.1 GI:17000953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USDA, ARS, US Meat Animal Research Center
PO Box 166, Clay Center, NE 68933-0166, USA
Tel: 402 762 4366
Fax: 402 762 4399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: smith@email.marc.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FORWARD: AGGAAACAGCTATGACCAT BACKWARD: GTTTTCCCAGTCACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -minmatch 12 options.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Smith TPL
```

```
Query Match 23.1%;
Best Local Similarity 77.9%;
Matches 529; Conservative (
                                                                                                                                                                                                                                                       pxx-5
                                                                                                                                                                                                                                                                                                   1. .682
                                                                                                                                                                                                                                                       Seq primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142
                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 563
                                                                                                                                                                                                                                                                          FEATURES
    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              а
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                             Ĥ
                                                                                                    /db_xref="taxon:9913"
/clone_lib="MARC 3BOV"
/clone_lib="MARC 3BOV"
/tissue_trpe="pooled"
/lab_host="nell0B"
/note="Vector: pCMV SPORT6; Site_1: Not1; Site_2: Sal1;
/note="Vector: pCMV SPORT6; Site_2: Not1; Site_2: Sal1; Site_2: Sal1;
/note="Vector: pCMV SPORT6; Site_2: Not1; Site_2: Sal1; Site_2: Not1; Site_2: Sal1; Site_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 30-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. I (bases 1 to 682)
IIH-MGC http://mgc.nci.nih.gov/
National institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BQ180663 682 bp mRNA linear EST 30-APR-UI-M-EXO-bxb-n-18-0-UI.rl NIH_BMAP_EXO Mus musculus cDNA clone IMAGE:5706065 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  90 CCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCCGT 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150 CCTCAGCGCCTGGGCCTCTCCACCTTGCATCTTGGCCTGGCCAACTTAACCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270 CATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              210 TGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        450 AAAAGAAGAC---ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               507 GTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                          .
.
                                                                                                                                                                                                                                                                                                                                                              DB 13; Length 525;
                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42;
                                                                                                                                                                                                                                                                                                                                                            Score 442.4; DB 1
Pred. No. 2.2e-95;
0; Mismatches 42
                       Seq primer: ATTTAGGTGACACTATAG.
                                                                                      /organism="Bos taurus"
                                       Location/Qualifiers
1. .525
Plate: 97 row: A column: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BQ180663.1 GI:20356155
                                                                                                                                                                                                                                                                                                                                                            24.4%;
ilarity 91.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus
                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     house mouse
                                                                                                                                                                                                                                                                                                                                                                                                      480;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
BQ180663
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                            FEATURES
                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         입
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
```

```
/db_xref="Lyaxon:10090"
/clone="IMAGE:5706065"
/clone="IMAGE:5706065"
/clone="IMAGE:5706065"
/clone="Lib="While Bara!"
/tissue_type="whole brain"
/dev_stage="embryo 15:5 dpc"
/lab_host="Dalu100 (T1 phage resistant)"
/note="Corgan: brain; Vector: pXX-Asc; Site_1: EcoR I;
/note="Corgan: brain; Vector: pXX-Asc; Site_1: EcoR I;
Site_2: Not I; The library was constructed according to
Bonaldo, Lennon and Soares, Genome Research, 6:791-806,
1996. Denatured mRNa was size fractionated on a 1% agarose
gel. First strand cDNA synthesis was primed with an
oligo-dT primer containing a Not I site. Double stranded
cDNA was size selected according to mRNA size fraction,
ligated with EcoR I adaptor, digested with Not I, and then
cloned directionally into pXX-Asc vector. The library tag
sequence located between the Not I site and the polyA tail
/s GTGGTGGAA. This library was created for the
University of Towa Mouse Brain Molecular Anatomy Project
(BMAP): 'Gene Discovery in the Developing Mouse Nervous
System', supported by National Instututes of Mental Health
(NIMH), Hemin Chin, Ph.D., program coordinator."
                                                                                      CDNA Library preparation: Dr. M. Bento Soares, University of Iowa CDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa CDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa Clone Distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov
This clone was contributed by the Brain Molecular Anatomy Project (BMAP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 CCCAGGACCAGTTTCTGCTGAAACAGCTTGTCTCCCAATGTCCTCATCTTCTCCTGCACCA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGTCATTAGCATCTGCACACATATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGG 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGGAGC 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGAAGAAGAAGAACATCAACA 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              146 CCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACC 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CGGTGCTCAGCGGGGTGCTTCTGTCGGCTCTCCACTTGGCCATCTCTCTGTGACACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     206 GTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAAAAAAGAAGA----CATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 14; Length 682;
                                                                 Tissue Procurement: Dr. James Lin, Univeristy of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 418.6; DB 14; Length
Pred. No. 1.2e-89;
0; Mismatches 146; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Mus musculus"/strain="C57BL/6"
Robert Strausberg, Ph.D.
                                      Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
```

S

Page

```
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.

Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 466)

Dias Neto, E., Garcia Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagai, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Goldman, G.H., Carvalho, A.F., Matsukuma, A., Baia, G.S., Simpson, D.H., Brunstein, A., deoliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare, M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and
                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A1905641 EST 30-MAR-2000 CM-E7094-110299-173 BT094 Homo sapiens CDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tel: +55-11-2704922
Fax: +55-11-2707001
Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/seq/gethtml.pl?tl=CM&t2=CM-BT094-173.html
£t3=110299&t4=1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  \operatorname{Simpson}, \operatorname{A.J.} Shotgun sequencing of the human transcriptome with ORF expressed shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCT 1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1069 CTGCAGCGGACTCGGGCCAACTCCATGGAAGGGC-TGATGCCGCGATGGGTTCCTGATCG 1127
                                                                                                                                          1128 TGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAG 1187
                                                                                                                                                                                                                        1188 CAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCT 1247
                                                                                                                                                                                                                                                                                                    1248 GAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTT 1307
                                                                                                                                                                                                                                                                                                                                                                                TITGCTCACCTTCCAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCG 1367
                                                                                                                                                                                                                                                                                                                                                                                                     253
                                                                                                                                                                                                                                                                                                                         252 GAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGTGCGCGGTT 193
                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    132 CITCGGAGCCTACGTIGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCT 73
                                                                                                                                                                                                                                              ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
                        Indels
    Pred. No. 1.4e-83;
0; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
1..466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Seq primer: puc 18 forward
                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AI905641.1 GI:6496028
    96.78;
    Best Local Similarity 96.7
Matches 412; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1488 GCTAAT 1493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AI905641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brazi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
AI905641/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                  g
                                                                                                                                       ò
                                                                                                                                                                             g
                                                                                                                                                                                                                                                         οq
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                               ò
                                                                                                                                                                                                                      òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dev_stage="Adult"
//dev_stage="Adult"
//dev_stage="Adult"
//note="Organ: breast; Vector: puc18; Site_1: SmaI; Site_2: SmaI; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196 .716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: +55-11-2704922
Fax: +55-11-2707001
Enail: asimpsondludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/seq/gethtml.pl?tl=CM&t2=CM-BT094-173.html £t3=050299&t4=1)
                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 30-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bukaryota; Metazoa; Chordata; Cranlata; Vertebrata; Euteleostomi;
Mammalla; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (Dases I to 442)
Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R., Nagai,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F., Goldman,G.H., Carvalho,A.F., Matsukuma,A., Bala,G.S., Simpson,D.H., Brunstein,A., deoliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and Simpson,A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Paulo-SP,
GGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGC 742
                                                                                                                                                                                                                GCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCC
                                                                                                                                                          AI905602
CM-BT094-050299-173 BT094 Homo sapiens cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
20202663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 442;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21.7%; Score 393.2; DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       88
t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="BT094"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  stringency conditions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: puc 18 forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AI905602
AI905602.1 GI:6495989
                                                                                                                                                                                                                                                                                                                     /sex="female'
                                                                                                                                                                                                                                                                                              803 TGCACTGCGGCGTCCTTGG 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                             RESULT 6
A1905602/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
COMMENT
                                                           623
                                                                                              481
                                                                                                                                     683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                  a
                                                       à
                                                                                          g
                                                                                                                                   δ
                                                                                                                                                                        qq
                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                            οŽ
                                                                                                                                                                                                                                                                                                                               g
```

```
/note—"Organ: prostate_normal; Vector: puc18; Site_1: Smal ; Site_2: Smal; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the PUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under Insulance conditions."
                                                                                                                                                                    This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl=&t2=CMl-FN0105-200 600-280-f02&t3=2000-06-20&t4=1)
Seq primer: puc 18 forwart: 9
High quality sequence start: 9
High quality sequence stop: 453.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTICCIGAGCCGIGCCAICGAIGCCCGCAGCAITGAICAGCIGCGGAAGGACCAIGIGC 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTC 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1181 ATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATG 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGC 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1001 ACATTGAGACTTTCCTCATCCTGGGCGCCAGCCAGAAACGGAAAGAGGAAAAGAGCATGC 1060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATG 1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      453 AGGIIGGAGICCGGGCIGGCCGCAICCACAICACICGGGCAACACIGCAGIACCIGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              393 GGGACTACGAGGTGGAGCCAGGCCGTGGCGAGCGCAACGCGTACCTCAAGGAGCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      213 CTGATCGTGCCTTCTCCCCGGACCAAGGCCTTCCGCCAATGGGCATTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           881 AAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 453;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21.7%; Score 392.8; DB 12; 96.7%; Pred. No. 1.7e-83; iive 0; Mismatches 12;
                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="FN0105"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGGTTTTTGCTCACCTTCCAGAGA 1328
                                                                                                            Tel: +55-11-2704922
Fax: +55-11-2707001
Email: asimpson@ludwig.org.br
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                           .453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          al Similarity
433; Conserv
                                                                                                  Brazi]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BE840138/C
LOCUS
                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1301
  MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35
                                                                                                                                                                                                                                                                                                            FEATURES
                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                            /note="Organ: breast; Vector: puc18; Site_1: Smal; Site_2: Smal; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196 ,716 - Ludwig Institute for Cancer Research) profiles into the puc 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryotta; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (Dases I to 453)
Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R., Nagai,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F., Goldman,G.H., Carvalho,A.F., Matsukuma,A., Baia,G.S., Simpson,D.H., Brunstein,A., deoliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare
                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 22-SEP-200 mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                               1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTT 1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTCGGAGCCTACGTTGCCTGTGGCCTTTGGTCTTCATCATCTGCTTCATCCAGCT 1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTAATTTTCCCACCTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCT 1487
                                                                                                                                                                                                                                                                                                                                                                 CIGCAGCGGACTCGGGCCAACTCCATGGAAGGGC-TGATGCCGCGATGGGTTCCTGATCG 1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157
                                                                                                                                                                                                                                                                                                                                                                                                     TGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAG 337
                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and Simpson, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTGCTCACCTTCCAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCGGAGCCTACGTTGCCTGTGGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence tags
Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
                                                                                                                                                                                                                                                                                        Length 466;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     453 bp mRNA linear
CM1-FN0105-200600-280-f02 FN0105 Homo sapiens CDNA, BE838164
                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                        6
                                                                                                                                                                                                                                                                                        Score 393.2; DB 9
Pred. No. 1.4e-83;
                                                                                                                                                                                                                                91 t
                                                                                                                                                                                                                                                                                                                           0; Mismatches
/organism="Homo sapiens"
                                                                                                                                                                                                                stringency conditions.
                  /db_xref="taxon:9606"
/clone_lib="BT094"
/sex="female"
                                                                                                                                                                                                                              143 g
                                                                            /dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BE838164.1 GI:10270542
                                                                                                                                                                                                                                                                                    21.7%;
llarity 96.7%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTAAT 1493
                                                                                                                                                                                                                                107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAAT
                                                                                                                                                                                                                                                                                                                             Matches 412;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
BE838164/c
                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                           1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1368
                                                                                                                                                                                                                                                                                                                                                                 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
```

g ò a ò Op à 셤 à g ŏ Ω ò g οy qq

3;

```
/UJGHILSH- THE MUSCALING
/UD XTEF="Taxon: 10090"
/Clone="INAGE:5401415"
/Clone=Lib="NIH MGC_94"
/tissue_Lype="Tretina"
/lab host="DH10B (phage-resistant)"
/note="Organ: eye; Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: SalI; Cloned unidirectionally; oligo-dT primed.
Average insert size 3; 3 kb. Library enriched for
Average insert size 3; 3 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                               EST 11-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutheria; Musiai; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Musiai (Dases 1 to 939)

NIH-WGC http://mgc.nci.nih.gov/.

National institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)

Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                             BI873142 939 bp mRNA linear EST 11-OCT-2(603397792F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:5401415 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapDs-remail.nih.gov
Tissue Procurement: The Cepko Laboratory
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
http://image.llnl.gov
High quality sequence stop: 638.
Location/Qualifiers
       1333 TTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCC 1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      193 TGGCAACTTAACCGTGGTGATGCCTTCCTCGGAAGCAGCTCGGTGCCAATGTGCTGCTG 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253 TTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133 CGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             313 CAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAAT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      373 CGCCAGCAGCAGCGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAA 432
                                                        28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 CGCATGAGGGCTGCGGTGCTCAGCGGGTGCTTCTGTCGGCTCTCCACTTGGTCATCTCT 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                117 CTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCTGCCTGTGCC
                                                                                                         CTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACACTC 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .;
8
                                                                                                                                Score 377; DB 13; Length 9
Pred. No. 1.1e-79;
0; Mismatches 160; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                              BI873142.1 GI:16046817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20.8%;
75.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 521; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1. .939
                                                                                                                                                                                                                                                                                                                                   mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                               house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
TITLE
JOURNAL
                                                                                                      1393
                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                 RESULT 10
                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                      BI873142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                   d
                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Organ: prostate_normal; Vector: puc18; Site_1: SmaI ; Site_2: SmaI; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
                                                                                                                                                                                                Dias Neto, E., García Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagal, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Goldman, G.H., Carvalho, A.F., Matsukuma, A., Baia, G.S., Simpson, D.H., Brunstein, A., deoliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare, M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl-&t2-QVO-FNO181-280 700-321-d07&t3=2000-07-28&t4=1) Seq primer: puc 18 forward High quality sequence start: 10 High quality sequence start: 10 High quality sequence stop: 415.
                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 417)
                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                  Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGAAGGGCTGATGCCGCATGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCC 1152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1033 CAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCC 1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1213 GCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGC 1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  357 ATGGAAGGCTCATGCCGCGCTGGCTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 12; Length 417;
                                                                                                                                                                                                                                                                                                                                                                       sequence tags
Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.4%; Score 387.8; DB 12; llarity 97.8%; Pred. No. 2.6e-82; Conservative 0; Mismatches 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="FN0181"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fax: +55-11-2707001
Email: asimpson@ludwig.org.br
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_stage="Adult"
  BE840138
BE840138.1 GI:10272516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: +55-11-2704922
                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                           Simpson, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                 ORGANISM
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1153
                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1093
                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                            SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dp
```

4;

Óγ

οy g ò

```
Homo sapiens
                                                                                                                                                                   Similarity
                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                 Matches 375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST
                                                                                                                                                   Query Match
Best Local 8
                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                  1553
                                                                                                                                                                                                                                                                                                                                                                                             1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            342
                                                                                                                                                                                                                                                                                                                                                                                                                         222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
BF369868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                           δy
                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Butheria; Primates; Catarrhini; Hominidae; Homo.

I (bases 1 to 1016)

S NIH-MGC http://mgc.nci.nih.gov/.

National institutes of Health, Mammalian Gene Collection (MGC)

U Dpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: Cgapba-r@mail.nih.gov

Tissue Procurement: Dr. James R. Lupski

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)

DNA Sequenching by: Agencourt Bioscience Corporation

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov.

Plate: LLAM13567 row: f column: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BO881496 1016 bp mRNA linear EST 16-AUG-2002 AGENCOURT_8229097 Lupski_dorsal_root_ganglion Homo sapiens cDNA clone IMAGE:6182035 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="dorsal root ganglia"
/dev_stage="adult, 36 yr"
/lab_host="DH10B"
/note="Vector: pcNV-SPORT6 (Life Technologies); Site_1:
Not!; Site_2: Sal!; DNN made by oligo-dT prinning.
Directionally cloned using the following adaptors:
252 CAGCAACAGGAGCGTCTCCTGCTGTCTTCCCCGTCATGTTGCCATGGAGATGAAA 311
                                              489
                                                                          371
                                                                                                        549
                                                                                                                      609
                                                                                                                                                                                               491
                                                                                                                                                                                                                             699
                                                                                                                                                                                                                                                         551
                                                                                                                                                                                                                                                                                                                  610
                                                                                                                                                                                                                                                                                                                                             729 TGAGGCCATCTCGCTGGTACGTGAGGTGAGTGTGATGTG---AACATGCGCGTGGG 785
                                                                                                                                                                                                                                                                                                                                                                             670
                                                                                                                                                                                                                                                                                     CTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGG-AGATGGGGGTAGACATGAT 728
                                                            GACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGC
                                                                                                                                                                 ACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCT
                                                                                                                                                                                                                         GCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGTGTCAGGG
                                                                                                                                                                                                                                                                                                                                                                         611 CGAGGCCATCTCGTTGGTCCGGGAGGTGACGGGGGGTGAACGTGAACATTGCGCGTGGG
                                             GAAGACATCAACACAAAAAAAAAGAAGA - - - CATGTTCCACAAGATCTACATACAGAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="Lupski_dorsal_root_ganglion"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        High quality sequence start: 31
High quality sequence stop: 645.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                         814
                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="IMAGE:6182035"
                                                                                                                                                                                                                                                                                                                                                                                                         CATCCACAGGGGGGGGGGTGCACTGCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BQ881496
BQ881496.1 GI:22273504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
                                                                         312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                     490
                                                                                                                                                                 550
                                                                                                                                                                                            432
                                                                                                                                                                                                                         610
                                                                                                                                                                                                                                                      492
                                                                                                                                                                                                                                                                                   670
                                                                                                                                                                                                                                                                                                               552
                                                                                                                                                                                                                                                                                                                                                                                                        786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
BQ881496
                                             433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
               g
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                       엄
                                                                                                                               g
                                                                                                                                                                                          g
                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                    임
                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                             à
                                                                                                     ò
                                                                                                                                                                à
```

```
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases I to 625)
Dias Neto, E., Garcia Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagai, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Goldman, G.H., Carvalho, A.F., Matsukuma, A., Bala, G.S., Simpson, D.H., M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and Simpson, A.J.
                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 24-NOV-2000
mRNA sequence.
5'-TCGACCCACGCGTCCG-3' and
5'-GACTAGTTCTAGATCGCGAGCGCCCCCT(15)-3'. Size selected >
1 kb for average insert length 1.7 kb. This is a primary library, non-amplified. Library constructed by Life Technologies and donated by J. Lupski, M.D./Ph.D. (Baylor College of Medicine) and is available through Life
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1433 TTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAA 1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1493 TCACCGTGCTGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAAC 1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCTGTCCCGCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATCTTTTCCG 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATAC 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    102 TCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAAC 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341
                                                                                                                                                                                                                                                                                                                                                                                              42 TCTTCCCACACTCCACCCTGATGCTTGGGATCTATGCCAGCATCTTCCTGCTGCTGCTGCTAA 101
                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        162 GTCTCTCCCCCAGCATTGTCCCCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
20202663
                                                                                                                                                                                                                                                                  Length 1016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BF369868 625 bp mRNA linear 625 bp mRNA linear CV4-GN0122-250900-424-C07 GN0122 Homo sapiens CDNA, BF369868.1 GI:11331893
                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                               Score 372; DB 14;
Pred. No. 1.8e-78;
); Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 and
                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: +55-11-2704922
Fax: +55-11-2707001
Email: asimpson@ludwig.org.br
                                                                                                                                                                                 268 9
                                                                                                                                                         Technologies."
297 c 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGCITICCTGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCTTTCCTGAGTACTTC 421
                                                                                                                                                                                                                                                             20.5%;
illarity 98.7%;
Conservative
```

```
133
                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                        LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                     3G004182/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          341
                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl=QV4&t2=QV4-GN0122-2590900-424-c07&t3=2000-92-25&t4=1)
Seq primer: puc 18 forward
High quality sequence start: 20
High quality sequence stop: 625.
Location/Qualifiers
Location/Qu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        651 TTACTACTGTGTGTCAGGGCTGCCGGAGCCCGGGCCGACCATGCCCACTGCTGTGTGGA 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     145 TGTCTCCAATGTTCTCATTTTCTCCTGCACCAACATCGTGGGTGTCTGCACCCACTATCC 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCACCTGCAGCATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCCAGCA 413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCAC 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGC 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGTTTGACAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTG 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     115 TACACGCTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCA-C 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           294 AGCAGAGGIGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCT 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25 TACACGCTGCTGCTGCGCGTGCGCATGCGGGCGCGCAGTGCTCAGCGGGGTGCTCCTGTCCTGC 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTGCATTTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    234 CGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 361.8; DB 12; Length 625;
Pred. No. 4.7e-76;
0; Mismatches 132; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20.08;
77.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . ტ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             625
                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
```

RESULT 13

```
Dias Neto. E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R., Nagai,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F., Goldman,G.H., Carvalho,A.F., Matsukuma,A., Bala,G.S., Simpson,D.H., Brunstein,A., deoliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=QV4&t2=QV4-GN0122-20100-555-h12&t3=2000-11-20&t4=1)
Seq primer: puc. Bf forward
High quality sequence start: 7
High quality sequence stop: 611.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ë
               EST 24-JAN-2001
BG004182
QV4-GN0122-201100-555-h12 GN0122 Homo sapiens cDNA, mRNA sequence.
BG004182
                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 611)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Paulo-SP,
                                                                                                                                                                                                                                                                                                                                            expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161 TGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCC 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        221 TCTGGAAGCAGCTCGGTGCCAATGTGCTGTTCCTCTGCACCAACGTCATTAGCATCT 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGTCGG 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               610 TGCTCCTGTCCGCCCTCCACCTGGCCATCGCCCTGCGCAACGCCCAGGACCAGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 611;
                                                                                                                                                                                                                                                                                                                                      Shotgun sequencing of the human transcriptome with ORF sequence tags
                                                                                                                                                                                                                                                                                                                                                                  Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
20202663
                                                                                                                                                                                                                                                                                                                                                                                                                                               Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             128; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 347.2; DB 1:
Pred. No. 1.5e-72;
0; Mismatches 128
                                                                      BG004182.1 GI:12445098
                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    trch 19.2%; sal Similarity 77.5%; 459; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
```

ä

셤

ö a ò g

Dp

ŏ

g

ò

QQ

à

```
Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
     performed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sednence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                               Similarity
                      Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                            Query Match
                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
BE001572/c
                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LITLE
                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                      g
                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 673)

Dias Neto, E., Garcia Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagal, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Goldman, G.H., Carvalho, A.F., Matsukuma, A., Bala, G.S., Simpson, D.H., Brunstein, A., deoliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare, M.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Organ: placenta_normal; Vector: puc18; Site_1: Smal Site_2: Smal; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 • Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 21-MAY-2002
mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: asimpsonelludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl=QV4&t2-QV4-GN0122-250900-424-a04&t13-2000-09-25&t4=1)
Seq primer: puc 18 forward
High quality sequence start: 5
High quality sequence start: 5
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Shotgun sequencing of the human transcriptome with ORF expressed
577
                                                                                                                                                578 ATGAGCTCTTTGCCCGGTTTGACAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGA 637
                                                                                                                                                                                                                       TCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCC 697
                                                                                                                                                                                                                                                                                             518 TTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCTGA
                                                     --ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACA
                                                                                                                                                                                                                                                                                                                                                  ACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTGGTACG 749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
                                                                                                                                                                                                                                                                                                                                                                     BQ370134 673 bp mRNA linear QV4-GN0122-250900-424-a04 GN0122 Homo sapiens CDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="GN0122"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BQ370134
BQ370134.1 GI:21045648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1, .673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Simpson, A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20202663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             BQ370134/c
                                                                                                                                                                                                                                                                            638
                                                                                                                                                                                                                                                                                                                                                  869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                     460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
```

SOURCE

```
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 367)
Dias Neto.E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R., Nagal,M.A., da Silva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F., Goldman,G.H., Carvalho,A.F., Matsukuma,A., Baia,G.S., Simpson,D.H., Brunstein,A., deoliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST 05-JUN-2000
mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                     350 TCCCCGTCATGTTGCCATGGAGATGAAAGCAGACATCAACGCCCAAGCAGGAGGATATGAT 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       581
                                                                                                                                                                                                                       165 CCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTG 224
                                                                                                                                                                                                                                                                                                                                     225 GAAGCAGCTCGGTGCCAATGTGCTGTTTCCTCTGCACCAACGTCATTAGCATCTGCAC 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                 285 ACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCA 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               345 GGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTTGTGTATT 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               290 GTTCCATAAGATTTACATCCAGAAACATGACAACGTGAGCATCCTGTTTGCTGACATCGA 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            230 GGGCTTCACCAGCCTGGCGTCCCAGTGCACTGCAGGAACTGGTCATGACCCTCAACGA 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   641
                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                           590 ccrerceccerceaccrescearcecereceaccaaccaaccaaccaaccaacrecreer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            642 GGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            110 TGGGGATTGTTATTACTGCGTCTCGGGGCTGCCTGAAGCAAGGGCTGACCACCCCCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                582 GCTCTTTGCCCGGTTTGACAAGCTGCCGGAGAATCACTGCCTGAGGATCAAGATCTT
                                                                                                                                                                  3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
20202663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      367 bp mRNA linear
PM2-BN0080-180400-004-g02 BN0080 Homo sapiens cDNA,
BE001572
                                                                                                           Length
under low stringency conditions
                                                                                                        Score 345.8; DB 14; Length
Pred. No. 3.3e-72;
0; Mismatches 132; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       702 CTGTGTGGAGATGGGGGTAGACATGATTGAGGC 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE001572.1 GI:8261805
                                                                                                        19.1%;
76.4%;
                          171 c
                                                                                                                                                                  438; Conservative
```

```
Fax: +55-11-2707001
Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=&t2=PM2-BN0080-180
400-004-9026x53=2000-04-18&t4=1)
Seq primer: puc 18 forward
High quality sequence start: 15
High quality sequence stop: 367.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                       ö
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  445 ACAAAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            685 GCCGACCATGCCCACTGCTGTGGGAGATGGGGGGTAGACATGATTGAGGCCATCTCGCTG 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55
                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18.9%; Score 342.4; DB 10; Length 367; ilarity 98.3%; Pred. No. 2e-71; Conservative 0; Mismatches 6; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       745 GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCG 796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 346;
                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local.
                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οqα
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

Search completed: March 1, 2003, 03:52:08 Job time: 1752.49 secs

mo)						
				·		
				•		
1. 9.						
					r min and Arabidian Condition	
	,		ing a state of the			
	ja v ij vij .			***.		
•						
						W

GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen Ltd.

(vithout alignments) (vithout alignments)
18-00-750-240-5 1 atgtcatggtttagtggcct 1 atgtcatggtttagtggcct 2 atgtcatggtttagtggcct 2 atgtcatggtttagtggcct 3 app 10.0
table: IDENTITY_NUC Gapop 10.0 , Gapext 1.0 1
2054640 seqs, 14551402878 residues ## Satisfying chosen parameters: ## Beaq length: 200000000 ## Cessing: Minimum Match 100% ## Listing first 45 summaries ## GenBmbl:* ## GenB
DB seq length: 0 DB seq length: 0 DB seq length: 0 DB seq length: 0 Cessing: Minimum Match 100% Listing first 45 summaries GenEmbl: * 1: 90_ba: * 2: 90_htg: * 4: 90_on: * 5: 90_pt: * 10: 90_pat: * 7: 90_pat: * 11: 90_bat: * 8: 90_ph: * 11: 90_bat: * 12: 90_by: * 13: 90_by: * 11: 90_bat: * 11: 90_bat: * 12: 90_by: * 13: 90_by: * 14: 90_vi: * 15: em_fun: * 16: em_fun: * 17: em_hum: * 18: em_li: * 19: em_cor: * 20: em_cor: * 21: em_cor: * 22: em_li: * 23: em_li: * 24: em_li: * 25: em_li: * 26: em_li: * 27: em_ktg_li: * 28: em_li: * 29: em_li: * 29: em_li: * 20: em_li: * 20: em_li: * 21: em_li: * 22: em_li: * 23: em_li: * 24: em_li: * 25: em_li: * 26: em_li: * 27: em_li: * 28: em_li: * 29: em_li: * 20:
DB seq length: 0 DB seq length: 200000000 Cessing: Minimum Match 106 Listing first 45: 1: gb_ba:* 2: gb_htg:* 3: gb_ln:* 4: gb_om:* 5: gb_pr:* 6: gb_pr:* 7: gb_pr:* 11: gb_br:* 12: gb_r:* 13: gb_r:* 14: gb_om:* 15: em_ba:* 16: em_ln:* 17: em_ba:* 18: em_ln:* 18: em_ln:* 18: em_ln:* 18: em_ln:* 19: em_ln:* 20: em_ov:* 21: em_ov:* 22: em_ov:* 23: em_ltg_inv:* 24: em_ltg_inv:* 25: em_ltg_inv:* 26: em_ltg_inv:* 27: em_ltg_inv:* 28: em_ltg_inv:* 29: em_ltg_inv:* 30: em_ltg_inv:* 31: em_ltg_inv:* 32: em_ltg_oln:* 33: em_ltg_oln:* 34: em_ltg_oln:* 36: em_ltg_oln:* 36: em_ltg_oln:* 37: em_ltg_oln:* 38: em_ltg_oln:* 39: em_ltg_oln:* 30: em_ltg_oln:*
cessing: Minimum Match 0% Maximum Match 106 Listing first 45: 1: gb_ba:* 2: gb_htg:* 3: gb_htg:* 4: gb_on:* 5: gb_pri:* 6: gb_pat:* 7: gb_pri:* 8: gb_bri:* 11: gb_bri:* 12: gb_st:* 13: gb_un:* 11: gb_st:* 12: gb_st:* 13: gb_un:* 14: gb_vi:* 15: em_ba:* 16: em_lun:* 17: em_bun:* 18: em_lun:* 18: em_lun:* 19: em_lun:* 10: em_lun:* 10: em_lun:* 10: em_lun:* 11: gb_vi:* 12: gb_vi:* 13: gb_un:* 14: gb_un:* 15: em_lun:* 16: em_lun:* 17: em_lun:* 18: em_lun:* 18: em_lun:* 19: em_lun:* 19: em_lun:* 19: em_lun:* 10: em_lun:*
GenEmbl:* 1: gb_ba:* 2: gb_htg:* 3: gb_in:* 4: gb_on:* 5: gb_ov:* 6: gb_ov:* 7: gb_ph:* 9: gb_pr:* 10: gb_pr:* 11: gb_sts:* 11: gb_sts:* 12: gb_ov:* 13: gb_un:* 14: gb_vi:* 15: em_ba:* 16: em_cor:* 17: em_tun:* 18: em_tun:* 18: em_tun:* 19: em_or:* 20: em_ov:* 21: em_or:* 22: em_ph:* 23: em_ph:* 24: em_ph:* 25: em_ph:* 26: em_tun:* 27: em_ph:* 28: em_tun:* 39: em_ttg_hum:* 31: em_htg_hum:* 31: em_htg_hum:* 32: em_htg_hum:* 33: em_htg_hum:* 34: em_htg_hum:* 34: em_htg_hum:* 35: em_htg_hum:* 36: em_htg_hum:* 37: em_htg_hum:* 38: em_htg_hum:* 38: em_htg_hum:* 39: em_htg_hum:*

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Recult	<u>+</u>		8						
NO	S	core	Match	Length	BB	ID		Description	ion
		549		mı	φ.	AR174473		AR174473	AR174473 Sequence
		υ 4 υ α	0.001	יי פיי		AX189761		AX189761	Sequence
		. 4	100	, (AF250226		AF250226	Homo sant
		2.5	95.2	ייי		AX189768		AX189768	Sequence
		8.9	88.9	ĽΩ		AB007882		AB007882	Homo sapi
		8.9	84.4	4		DOGADENCYC		M94968 C	anis famil
		4.0	84.3	4 u		I29958		129958 S	equence 1
		765	7.7	ח נו				MOSACO	Pednence
		2 0) 4	1 4			AP106659	Sequence
		. r		* 4				M96160) Rattus norv
			77.3	. (2				T.01115 P.	Rattus norv
		7.6		יי כ				MORARA	מנומים
		† ~) t-				CC 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Socionopoo
		* ·		-				AV100750	Sognonos
								COLON COLON	7
		7.0		4.				M0004V	dills idilli
				* <				MO6150	Setting norm
		7.0	0.04	4.0				MADED	Karrus norv
		7.7	40.4	חנ				AKIU00038	Sequence
		4.6	4.0	۷.				AF49/01/	HOMO Sapi
		٥.	40.4	4. 5				AU29381/	cartus ga
o t		4.5	74. T	200				ACLI/498	Homo sapi
		0 0	2.4.0	4				AC021047	ROUGE SAPT
		2 0	0.00	. [AA410303	nome dans
ນ		0.7	7.66	T / T		ACU2555/		AC025557	37 HOMO Sapi
			22.7	4 (MOVE BE	anic famil
		9.5	7.97	7 0				000/00/00/00/00/00/00/00/00/00/00/00/00	Mis missi
		707	10.0	ח ה				ACU/4026	Oze mus muscu
		טעם טעם		"				M200/9 B	ovine agen
		מ מ מ		"				AKIU00034	Sednence
		4.0		157				AC129405	Rattus no
ນ		200		ה ה		ACUSOBSS		ACUYORSO	ACUSOBSS KALTUS DO
		าแ		1 (AF 00090	O Mus muscu
		אר) (2				00001*VV	terrice and
		A IX		יז כ				AV107004	Codinondo
) (יונ				A L 3 C O L A A A	, acc 0 0 0 0 1
		O IX		, ,				AV457036	
		1 11		ייטי				AA43/030	eduence
		n C		.				WA#3/03/	sequence
		> 10		•				455509 n	saptens in
		3 ti		.				1001	
		$^{\circ}$	٦.	2004				AX45/033	v .
•	45 47	2.7	13.4	5873	ه م	AX45/U34 AB028983		AX45/034 AB028983	Sequence Homo sapi
						ALIGNMENTS			
RESULT AR17447	LT 1 4473	128	AP174473			ç G	and and	PAG read!	17-DEC-2001
DEFI	DEFINITION	Sedi		5 from patent	pate	US 6306830.			
VERS	ACCESSION VERSION	ARI,	AR174473 AR174473.	1 GI:1	:179147	793			
KEYWORDS SOURCE ORGANIS	YWORDS URCE ORGANISM	Unkr	Unknown. Unknown.						
REFE	REFERENCE	Unc]	Unclassified 1 (bases 1	ied. 1 to 3: Kirk	549)	o para	0 tacd	א טפט קטפ	2
i o	TITLE	Gene	ther ent: U	apy for S 63068.	con 30-A	manuscript for congestive heart failure Patent: US 6306830-A 5 23-OCT-2001;	ailure		
FEATURES	JRES			Location	ño/u	alitiers			

N

	0;																
ce 13549 /organism="unknown" T 699 a 1025 c 1061 g 764 t	ch 100.0%; Score 3549; DB 6; Length 3549; 1 Similarity 100.0%; Pred. No. 0; 649; Conservative 0; Mismatches 0; Indels 0; Gaps	ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60	GAACGCAATGGGCAGAAGCGTTCGCGGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120	CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCCTGCGGGCCCC 180	CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGG	GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG 300	GGCGGGACGGCTGAGGTGGCGCCCGACGGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC 360	CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC 420 	CAGCGGTACTTTTCCAGATGAACCAGAGCTGACGCTGACGCTGCTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGT	CTGCTCACAGCGGTGCTGGCTTTCCAAGCCGCACCGCCCGC	GTGGCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGCTCATGGTGGTGTGTAACCGG 600	CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAACGTGGTGCTGGGCATCCTGGCG 660	GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCCGCGCAGCCCTCTGCGGGCCTCTGG 720	TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC 780	GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT 840	GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC 900 	GTCATTAGCAFCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAG 960
SOUIC COUNT IN	ery Mat st Loca tches 3		61 61	121	181	241	301	361	421	481	541	601	661	721	781	841	901
BASE ORIGI	Que	Qy	Oy Dp	Oy Dp	Oy Dp	o da	QV Db	oy Db	Qy	Oy Dp	Qy Dp	oy Db	oy Dp	Qy Dp	Oy Db	QY	Qy Db

ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGGAGCGG AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTG TTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTC GACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTGGTA CGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTGCAC CGTGAGGTGACAGGTGTGAAATGTGAAAATGCGCGTGGGCATCCACAGGGGGCGCGTGCAC GAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATG CCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAG TCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTGCCTGTGCCCTGTTGTTCTGC TCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTACGTTGCCTGTGTCCTGTTGGTCTTCTGC TTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATTTAT AGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGGGGCC CAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTAC QQ oy Oy qq OY Db oy Op Qy Db 9 9 9 6 Q οy g δy q ò g ğ g ŏ

110	Db 3121 GGGCTGAACGCCAGCACCTACGATCAGGTV Oy 3181 TACGCCATGCGGCTCATGGAGCAGATGAAC Db 3181 TACGCCATGCGGCTCATGGAGCAGATGAAC Oy 3241 CAGATGAAGATTGGGCTGAACATGGGCCC Oy 3301 CCACAGTATGAACATTGGGCTGAACATGGGCCC Oy 3301 CCACAGTATGACATCTGGGGGAACACAGTV Db 3301 CCACAGTATGACATCTGGGGGAACACAGTV Db 3301 CCACAGTATGACATCTGGGGGAACACAGTV	Oy 3361 GTCCCGACCGAATCCAGGTCACCACGGA Db 3361 GTCCCCGACCGAATCCAGGTCACCACGGA Qy 3421 CAGCTGGAGTGTCGAGGGTGACCACGGT Oy 3421 CAGCTGGAGTGTCGAGGGTGTCAAGGT Oy 3481 CTCAATGGGGGCCCCAGCAGTTAACAGGG Oy 3481 CTCAATGGGGGCCCCAGCAGTTAACAGGG Oy 3541 GTGGCACT 3549 Db 3541 GTGGCACT 3549	RESULT 2 AX189761 354 LOCUS DEFINITION Sequence 5 from Patent WO01 ACCESION AX189761 GI:15143135 KEYWORDS human. ORGANISM Homo sapiens EUKARYOCIA; Metazoa; Chordat Mammalia; Eutheria; Primate REFERENCE I Casa 549) AITHORS Hammond H.K. and Gao.M.	N I O	Qy 1 ATCHCONSTACT Qy 1 ATGTCATGGTTTAGTGCCTCCTGGTCCC Db 1 ATGTCATGGTTTAGTGCCTCCTGGTCCC QY 61 GAACGCAATGGCTTAGTGCCTCCTGGTCCC QY 61 GAACGCAATGGGTTAGTGCCTCCTGGTCCCCCCCCCCCC	
	11111111111111111111111111111111111111	281 TTCACCTGTAACCACCCCCATACGAGCTGTGCAGCTGTGTGTG	2521 ATCTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTGCTGGGTCCCCCCAGCCGCCCATC		2881 GCCCGGGAGCGCCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTTATG	3001 GCCGAGTGCTGCGGCTGCTCACGAGATCACTGCTGATTTTGATGAGGTTATCAGGGGGGGG

```
PAT 08-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ita; Craniata; Vertebrata; Euteleostomi;
es; Catarrhini; Hominidae; Homo.
                                                                    CCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAG 3300
                                                                                                                 TGAATCTCTAGTCGTATGGACACCACGGGG 3360
                                                                                                                                                                                                                               GCCCAGCCACAAATTCAGCTGAAGGGACCAAG 3540
                      AAGCACATCAATGAGCACTCCTTCAACAATTTC 3240
                                                                                                                                                                                TGAAGGGCAAGGGGGAGATGACCACCTACTTC 3480
                                                                                                                                                                                                                                                                  GCCCAGCCACAAATTCAGCTGAAGGGACCAAG 3540
                                                                                                                                                                   ACCTGTACCAGGTTCTAGCTGCCAAGGGCTAC 3420
TGGGCCGCTCCCACATCACTGCCCTGGCTGAC 3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3CAGAGCCACCCAGCCCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCATCCGGAGGGGGGGCCAGGCAAGGGCAAG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 6; Length 3549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ve heart failure
-JUL-2001;
SITY OF CALIFORNIA (US)
                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   764 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ore 3549;
ed. No. 0;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens"
9606"
g 764
                                                                                                                                                                                                                                                                                                                                                                                                   549 bp
0148164.
```

ö

O D	241	GACCTGGGGCCAGCGCCAGGCCTTCGAGGATACCGAGGTGACAACGACAGCG 300 	
Oy Db	301	GGCGGGACGCTGAGGTGGCGCCCGAACGCGTGCCCAGGAGTGGGCGATCCTGCTGGCGC 3	
Oy Dp	361	CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC 420 	
Oy Dp	421	CAGGGTACTTTTCCAGATGAACCAGAGCTGACGCTGCTGGTGGGGGGTGCTGGTG 480 	
oy Dp	481	CIGCICACAGGGGTGCTGCTGGCTTTCCAAGCCGCACCGCCCGCC	
QY Db	541	GTGGCACTGTTGGCCTGTGCCGCCGCCTGTTCGTGGGGCTCATGGTGTGTATACCGG 600 	
Oy Dp	601	CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG 660 	
Qy	661	GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGACCCGGCAGCCCTCTGCGGGCCTCTGG 720 	
Qy Dp	721	TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC 780 	
Oy Dp	781	GTCCTCAGGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCACTTAACCGT 840 	
oy Db	841	GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC 900 	
QY Dp	901	GTCATTAGCATCTGCACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAG 960 	
Oy Db	961	ACCGGAGTTACATCCAGGCCCGGCTCCACTGCAGCATGAGAATCGGCAGCAGGAGCG 1020 	
oy Dp	1021	CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA 1080 	
9 9	1081	AAAAAAGAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTG 1140 	
oy Db	1141	TTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTC 1200 	
Qy Db	1201	ATGACCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCTG	
Oy Dp	1261 1261	AGGCTGCCGGAGCCCGGGCC 132. 	

CTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTG 2460 GACCATGCCCACTGCTGTGTAGAGGGGGTAGACATGATTGAGGCCATCTCGCTGGTA GCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTG CGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTGCAC TGCGGCGTCCTTGGCGAAATGGCAGTTCGATGTGTGTCGAATGATGTGACCCTG CCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAG ATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCTGAG GAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATG GATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGG AGCACCGCAGTTGGCATCTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATG GCTGACATCACTGCCTGCCACCTGCAGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCC GCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGT TCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACAT TTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCT QQ Oy Dp 0y Db Q D QY Db Qy Db QY Db δ g ò Ωp δŽ Op δý qq Qy Db òγ Ω Q Dp οy g οy q ŏ g g οχ Ω

Db 3481 CTCAATGGGGCCCCCAGCAGTTAACAGGCCCAGCCACAAATTCAGCTGAAGGACCAAG 3540 Qy 3541 GTGGGCACT 3549 Db 3541 GTGGGCACT 3549	RESULT 3 AX189766 LOCUS DEFINITION Sequence 10 from Patent W00148164. ACCESSION AX189766.1 GI:15143139 KEYWORDS SOURCE Numan. ORGANISM Homen Bukarvota: Metazoa: Chordata: Craniata: Vertebrata: Enteleostomi:	utheria; Primates; Catarrhin; Hominidae; to 3552) and Gao,M. y for congestive heart failure 0148164-A 10 05-JUL-2001; OF THE UNIVERSITY OF CALIFORNIA (US) cation/Qualiflers 3552 3552 3552 Laganism="Homo sapiens" 0.xref="taxon:9606" 1037 c 1068 g 761 t	Query Match 98.2%; Score 3484.8; DB 6; Length 3552; Best Local Similarity 99.0%; Pred. No. 0; Matches 3517; Conservative 0; Mismatches 32; Indels 3; Ga 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT	0y 61 GAACGCAATGGGCAGAAGCGTTCGGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120	Db 181 CTCGGTGCCCTGGCGGTGACGCTTTCTTTTTTTTTTTTT	Qy 361 CGTTGGTGCAGGTGTTCAAGTCGTTCGGCCAAGCTGGAGCGCCTGTAC 420 Db 361 CGTCTGGTGCAGGTGTTCCAAGTCGTTCGGCCAAGCTGGAGCGCCTGTAC 420 Oy 421 CAGCGGTACTTTTTCCAAGTCAACCAGAGCAGCTGACGCTGCTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGT
	2521 ATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCGCCCCCCCC	Db 2641 GATGGGCTGGACTGCAGGCTGGGCTGGCCCTCAAATATATGACCCCTGTGATT 2700 Qy 2701 CTGCTGGTGTTTGCGCTGGGGCTGTATCTGCAGGAGTGGAATCGAGTGGATT 2700 LIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHI	E-F 0-0	OY 3001 GCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGTTATCAGCGAG 3060	3121 GGGCTGAACGCCACCTACGATCAGGCCCGCTCCCACATCACTCCTCGCTGACTGA	CCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACGGGGGGGG

ä

660 660 720 720 780	4 4	096 006	1020	1080	1137	1197	1257	1317	1377	1437	1497	1557	1617 1620	1677 1680
CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG	GTCCTCAGCGCCTGGGCCTCTCCACTTGATTTGATCTTGGCCTGGCAACTGCCTGC	GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTTCCTCTGCACCAAC	. ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCACATGAGAATCGGCAGCAGGAGCGG 	. CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACA 	AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 	CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCCAGTGCACTGCGCAGGAGCTG	GTCATGACCCTGAATGAGCTCTTTGCCGGTTTGACAAGCTGGCTG	3 CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGG	GCCGACCATGCCCACTGCTGTGGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG	GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGGGGGG	CACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGTGGGTCCAATGATGTGACC	CTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCACATCACTCGGGCAACA	CTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCG	TACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGCGCCAGCCA
601 601 661 721	* co co	841 841 901	961	1021	1081	1138	1198	1258	1318	1378	1438	1498	1558	1618
oy oy	A G	oy Oy	oy Db	Qy Dp	Qy Dp	oy Oy	oy Op	Oy Op	Qy Dp	oy.	Qy Dp	Qy Dp	Qy Db	Qy Db

1920 2040 2157 2217 2337 2400 2457 2460 2640 2700 2817 1737 1740 1797 1800 1857 1917 1977 1980 2037 2097 2100 2160 2220 2280 2340 2397 2517 2520 2577 2637 2697 2757 2277 GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGGTGCTGTGATCAGCTGGATGAGTTCAGATCAGCTGGAGCCGTGCCATCGATGCCGCAGCATTGATCATCATCAGCTG 2758 CGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTA CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG ATTCTGCTGGTGTTTGCGCTGTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC GAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT CGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGGATTTTGAGAAGAAG TACTCCCGGAAGGFGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTTGGTCTTC TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT ATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA CCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC 1981 2281 2401 2518 2641 2041 2338 2398 2578 2638 1678 1861 1918 1921 1978 2038 2098 2101 2158 2218 2221 2278 2341 2458 2461 2521 2581 2701 1681 1738 1741 1798 1801 1858 2161 QΥ Db qq DP QV Q Oy Dp a qq Ω g 셤 ò g οy g Qγ g δy g δý g QΥ Oy Dp οy οy QΩ οy ò q δ ò ò

```
SCHEMBER POT FROFFER LEMBER SCHEME LINGER PER BLIVER BELLY STORE STATEMANDER IN THE SCHEME SCHEME STATEMANDER STATEMAND STATEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QSCECVAVMFASTÄNFSEFYVELEANNEGVECLRLLNEITADFDEITSEERFRQLEKI
KTIGSTYMAASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQMKIGLN
MGPVVAGVIGARKPQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MSWFSGLLVPKVDERKTAWGERNGGKRSRRGTRAGGFCTPRYM
SCLRDAEPPSPTPAGPPRCPWQDDAFIRRGGPGKGKELGLRAVALGFEDTEVTTAGG
                                    Chases 1 to 6463)
Wicker,R., Gascon Catalan,A., Cailleux,A.-F., Starenki,D.,
Wicker,R., Gascon Catalan,A., and Suarez,H.G.
Direct Submission
Submitted (28-MAR-2000) Lab Etude des Relations - Instabilite
genetique et Cancer UPR 2169, Institut de Recherches sur le Cancer
CNRS IRR 1221, 7 rue Guy Moquet, Villejuif 94801, France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACGCAATGGGCAGAAGCGTTCGCGGCGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 3478.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
/product="adenylyl cyclase
/protein_id="AAF82478.1"
/db_xref="GI:9049783"
                                                                                                                                                                                           1. .6463
/organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="12"
                                                                                                                                                                                                                                                                                        /tissue_type="thyroid"
complement(19. .447)
'rpt_family="Alu"
/rpt_type=dispersed
469. .561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GVVKVKGKGEMTTYFLNGGPSS
                                                                                                                                                                                                                                                                                                                                                                                                            /rpt_type=dispersed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1871 9
                                                                                                                                                                                                                                                                                                                                                                                         /rpt_family="MIR"
                                                                                                                                                                                                                                                                        /map="12q12-q13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98.0%;
ilarity 98.9%;
Conservative C
                                                                                                                                                                                                                                                                                                                                                                                                                              .4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
  20435313
10978539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1264
                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Sim
Matches 3513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
  MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                          REFERENCE
                                                          AUTHORS
                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                             FEATURES
                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRI 15-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 6463)
Wicker,R., Catalan,A.G., Cailleux,A., Starenki,D., Stengel,D., Sarasin,A. and Suarez,H.G.
Cloning and expression of human adenylyl cyclase type VI in normal thyroid tissues
                                                                                                                                                                                                                                                                                                                                                                                                                                                3177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG
                                                                                                                                                                                                                                                                                                             AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGCCGAGTGCCTGCGGCTCCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC
                                                                                                                                                                                                                                                                                                                                                                     GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6463 bp mRNA linear PRI cyclase type VI mRNA, complete cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochim. Biophys. Acta 1493 (1-2), 279-283 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AF250226.1 GI:9049782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens adenylyl
AF250226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGIGGCACI 3552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGGIGGCCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF250226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 4
AF250226
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
SOURCE
ORGANISM
                                                                                              2821
                                                                                                                                                                                                                                                  2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                        2818
                                                                                                                                   2878
                                                                                                                                                                         2881
                                                                                                                                                                                                                                                                                        2998
                                                                                                                                                                                                                                                                                                                               3001
                                                                                                                                                                                                                                                                                                                                                                     3058
                                                                                                                                                                                                                                                                                                                                                                                                          3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                3118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3541
                    2761
                                                                                                                                                                                                                2938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                          8
                                                                                                                                                               g
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                        οy
                                                                                                                                 ò
                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
```

1;

9

															•				
994	09	42	480	1174	540	900	3 60 16	720	780	840 1534	900	960	1020	1080	1137	1197	1257	1317	1377
5 GAGCTGGGGCTGGGCCTTCGAGGATACCGAGGTGACAACGACACAGC	1 GGCGGGACGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCG	GGTTTGGTGCAGGTGTTCCAGTCGCCGAGGCCCAGGAGTGGGCGATCCTGGCTGG	CAGGGGTACTTTTTCCAGATGAACCAGAGCTACAGTTCCGCCAAGCTGGAGCGGCGCCAACACTTTTCCAGATGAACCAGAGCAGCCCTGACGAGCGGGGGGGG		1 CTGCTCACAGGGGTGCTGCTGCTTTCCAAGCGCGCCCCCCCC	GTGGCACTGTTGGCCTGTGCCGCCCTGTTCGTGGGGCTCATGGTGGTGTGTGT	AGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGGTGGTGGCACTCGTGGTATALLIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	1 GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCCCGCGCGCG	1 IGCCCTGIGITCITIGIAIACATGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC	1 GTCCTCAGCGGCCTGGGCCTCTCCACTTGGATCTTGGCCTGGCAACTTAACGGT	GGTGATGCCTTCCTCTGGAAGCACCTCGGTGCCAATGTGCTGCTGCTGTTCCTCTGCACCAAC	GTCATTAGCATCTGCACACACTATCCAGCAGGGGTGTCTCAGGGGCCTTTCAGGGGGGGG	. ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG	CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA	AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 	CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG	GTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGCCTGC	CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTCAGGGCTGCCGGAGGCCCGG	GCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG
93.5	301	אַ פֿי אַ	וֹא רֹ	1115	48]	541	0 0	661	721	781	841 1535	901	961 1655	1021	1081	1138	1198	1258 1955	1318
엄	Š Š	3 8 8	G &	g	oy Dp	δ, d	oy Db	Qy Dp	Qy Dp	Qy Dp	oy ob	oy ob	Oy Op	Oy Dp	do Oy	B G	Oy Dp	Qy Db	O O O

	RESULT 5 AX189768 LOCUS AX189768 3582 bp DNA linear PAT 08-AUG-2001 DEFINITION Sequence 12 from Patent WO0148164.	ACCESSION AX189768 VERSION AX189768.1 GI:15143140 KEYMORDS . SYNTHELIC CONSTRUCT.	ORGANISM synthetic construct artificial sequences. REFERENCE 1 (bases 1 to 3582)	Gene ther Patent: W	rEATURES LOCATION QUALITIEES Source 13582 /organism="synthetic construct" /db_xref="taxon:32630"	ore="modified AC-V1" 1036 c 1067 g 776 t	uery Match 95.2%; Score 3379.2; DB 6; Length 3582; Best Local Similarity 97.4%; Pred. No. 0; Matches 3458; Conservative 0; Mismatches 88; Indels 6; Ga	Qy 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60 	QY 61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120	Qy 121 CCCGGCTATATGAGCTGCCTCCGGGATGCAGACCCCCCCC	OY 181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCAGGCAAGGGCAAG 240	Qy 241 GAGCTGGGGCTGCGGGCAGTGGCCTTGGGGTTCGAGGATACCGAGGTGACAGCG 300	Oy 301 GGCGGGACGCTGAGGTGGCCCCACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC 360	Qy 361 CGTTIGGTGCAGGTGTTCCAGTCGAAGCAGTTCGGTCCAAGCTGGAGCGCCTGTAC 420	Qy 421 CAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGGTGGTGGTGGTG 480	OY 481 CIGCICACAGCGGTGCTGCTGGCTTTCCAAGCCGCACCCGCCCTCAGCCTGCCT	AY 541 GIGGCACIGITGCCCGCCCCCCTCTCGTGGGGCTCATGGTGGTGTGTAACCGG 600	Qy 601 CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGATAACGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTGGTG
OY 2458 CIGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACCATCAGCATCGGGAAGTTGGCC 2517	2518 ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTGCT	2578 ATCTTTGACAACTATGACCTACGCGCGCCCATGGCTTGCCTTCCAATGAGACC	OY 2638 TTTGATGGGTGGACTGTCCAGCTGCAGGAGGGTGGCCCTTCAANATATGACCCCTGTG 2697	QY 2698 ATTCTGCTGGTGTTTGGGCTGGCGCTGTATCTGCATGCTGGGGAGGGGAATGGACTGCC 2757	OY 2758 CGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGTA 2817 	QY 2818 CAGGCATACCAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC 2877	QY 2878 CTGGCCCGGGAGCGCCGCAATGAACTCTACTATCAGTCGTGGGAGTGTGTGGCTGTT 2937	QY 2938 AIGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG 2997 	OY 2998 GGTGCCGAGTGCTGCTCGACGAGATCATCGCTGACTTTGATGAGATTATCAGC 3057	8=8	18 TCAGGGCTGAACGCCAGCACCATCAGTGGGCGCCCCCCACATCACTGCCTGGCT	A – A	3238 TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCCTCGG 111111111111111111111111111	CGTATGGACAGCACG	3358 GGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC	3418 TACCAGCTGCAGGTGCCAGGTGCTCAGGTGACCAGGTGCAGGGTCTAGGTGCCAGGGCGAGATGACCAGGTCACCTAGGTGCCAGGGGGGGAGATGACCACCTACTAGGTGAAGGGGAGAGATGACCACCTACTAGGTGAAGGGGAGAGAGGAGAAGGGGAAGATGAAGAGGAG	3478 TTCCTCAATGGGGCCCCAGCAGTTAACAGGCCCCACCAAATTCAGCTGAAGGGACC	3538

GGCATCCTGGCG 681	GCGGGCCTCTGG 720 	ATGCGGGCTGCC 780 	CAACTTAACCGT 840 	CTCTGCACCAAC 900 CTCTGCACCAAC 921	GCCTTCAGGAG 960 GCCTTCAGGAG 981	CAGCAGGAGCGG 1020 	GACATCAACACA 1080 	CAATGTCAGCATC 1137 	TGCGCAGGAGCTG 1197 TGCGCAGGAGCTG 1221	GAGAATCACTGC 1257 	CCGGAGGCCCGG 1317 	GCCATCTCGCTG 1377 GCCATCTCGCTG 1401	AGCGGCGCGTG 1437 AGCGGACGTGTG 1461	CAATGATGTGACC 1497 AAACGATGTGACC 1521	ACTCGGGCAACA 1557 	CAAGCGCAACGCG 1617 TGAACGCAATGCG 1638	CCAGAAACGGAAA 1677 CCAAAACGGAAA 1698	CATGGAAGGCTG 1737
ATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTTACGTGGTGCTG	CAGTGCAGGTCGGGGGCGTTTCGCAGCAGCAGCCGCGCAGCCCCTCT(GCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGC 	TCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGG 	GTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCC 	TCATTAGCATCTGCACACTATCCAGCAGAGGTGTCTCAGCGCCAGG 	CCCGCAGTTACATCCAGGCCGGGTCCACCTGCAGCATGAGAATCGG 	CTGCTGCTGTGGTATTGCCCCAGCACGTTGCCATGAGAAGACA 	aaaaagaagacatgttccacaagatctacatacagaagcatgac 	TGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCAC 	GTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCTG	CTGAGGATCAAGATCTTGGGGACTGTTACTACTGTGTGTG	CCGACCATGCCGCTGTGTGGAGATGGGGGTAGACATGATTGAGG 	GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGG 	CACTGCGGCGTCCTTGGCTTGCGAAATGGCAGTTCGATGTGTGGGTCC 	TGGCCAACCACATGGAAGCAGAAGCCGGCTGGCCGCATCCACATCAC 	CTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGC 	CAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGGGCCCAG 	CAGCGGACTCGGGCCAACTC
622 C	661 G 682 G	721 T	781 G 802 G	841 G 1 862 G	901 G 922 G	961 A 982 A	1021 C 1042 C	1081 A 1102 A	1138 C	1198 G 	1258 C 1282 C	1318 G 1342 G	1378 G 1402 G	1438 C 	1498 C 1522 C	1558 C 1579 C	1618 T	1678 G
q	ογ Dp	oy Db	oy Db	Qy Db	Qy Db	oy Ob	Oy Dp	Qy Db	o d	Oy Dp	Oy Dp	oy Ob	Oy Op	oy Db	Qy Db	Qy Db	Qy Db	δy

GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG 2059 IGCITCATCTGCTTCATCCAGCTTCTCATCTTCCCACACTCCACCCTGATGCTTGGGATC 2299 ATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA 2458 CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC 1999 TACTCCCGGAAGGTGGATCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTTGTTTC TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCTGATGCTTGGGATT CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT TACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTC GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA 2179 GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCACCATTGTCCGCTACGGGCA 2479 CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC ATGTTCACCTGTAACCACACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA QQ g oy Ob 셤 g q ò δ õ ŏ ò δý δ g ò g

DNA

```
Ohara,O.
Direct Submission
Submitted (06-0CT-1997) Osamu Ohara, Kazusa DNA Research Institute,
Laboratory of DNA Technology; Yana 1532-3, Kisarazu, Chiba
292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp, Tel:+81-438-52-3913,
Fax:+81-438-52-3914)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQM<sup>K</sup>IGLNMGPVVAGV
IGARKPQYDIWGNTVNVSSRMDSTGVPDRIOVTTDLYQVLAAKGYQLECRGVVKVKGK
                                                                                                                                                                                   /tissue_type="brain"
/clone_lib="pBluescriptII SK plus"
/note="This sequence was obtained by subcloning of the I fragments derived from two cDNA clones (1 - 1352 was derived from pg00161 and 1353 - 5877 was derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGCGCCCAGGCAAGGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCACCCCTGCGGGGCCCC
                                                                                         On May 9, 2002 this sequence version replaced gi:2887418 Sequence updated (05-Jan-1998).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 5877;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 3156.8;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1782 g 1335
                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="hh01205s1"
                                                                                                                                                                                                                                                                     /gene="KIAA0422"
<1. .3484
                                                                                                                                                                                                                                                                                       /gene="KIAA0422"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GEMTTYFINGGPSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88.9%;
94.5%;
                                                                                                                                                                          /sex="male"
            (bases 1 to 5877)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1612 c
                                                                                                                                                                                                                                                         .5877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 3358; Conservative
                                                                                                                          .5877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ๗
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1148
  9455477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
            REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               317
  PUBMED
                                                                                                                                                                                                                                                                                 CDS
                                                                                                                  FEATURES
                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRI 10-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ishikawa,K., Nagase,T., Nakajima,D., Seki,N., Ohira,M.,
Miyajima,N., Tanaka,A., Kotani,H., Nomura,N. and Ohara,O.
Prediction of the coding sequences of unidentified human genes.
VIII. 78 new cDNA clones from brain which code for large proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SK
          3117
                                                                                                                                                                                                                                                          3198
                                                                                                                                                                                                                                                                                             GGGGTCCCCGACCGAATCCAGGTGACCAGGACCTGTACCAGGTTCTAGCTGCCAAGGGC 3417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCGAAGGGGGAATGACCACCTAC 3477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA, clone_lib:pBluescriptII
                                                                                                     GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC
                                                       ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG
                                                                                                                                                  AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGCCGAGTGCCTGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC
                                                                                                                                                                                                                                                                                                                           TTCCAGATGAAGATTGGGCCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens KIAA0422 mRNA, partial cds. AB007882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens male brain cDNA to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA Res. 4 (5), 307-313 (1997)
98116655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB007882.2 GI:20521044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           plus clone:hh01205s1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGTGGCCACT 3570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGGTGGCCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VIII. 78 r
in vitro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KIAA0422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 6
AB007882
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                       3139
                                                                                                                                                                                                                                                                                                                                                 3259
                                                                                                                                                                                                                                                                                                                                                                         3298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
                     2839
                                            2878
                                                                  2899
                                                                                         2938
                                                                                                               2959
                                                                                                                                      2998
                                                                                                                                                             3019
                                                                                                                                                                                    3058
                                                                                                                                                                                                           3079
                                                                                                                                                                                                                                  3118
                                                                                                                                                                                                                                                                              3178
                                                                                                                                                                                                                                                                                                     3199
                                                                                                                                                                                                                                                                                                                           3238
                                                                                                                                                                                                                                                                                                                                                                                             3319
                                                                                                                                                                                                                                                                                                                                                                                                                    3358
                                                                                                                                                                                                                                                                                                                                                                                                                                          3379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
 2818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                    g
                                                                                                             qq
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
ŏ
                                           δy
                                                              g
                                                                                       ŏ
                                                                                                                                      QΥ
                                                                                                                                                          q
                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                  δŽ
                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
```

1576 1636 1756 1816 1876 1936 1917 2056 2176 1437 1497 1557 1696 1617 1677 1737 1797 1857 1996 1977 2116 2037 2236 2157 2296 2356 2277 2416 2337 2422 2422 2457 2097 2217 2397 ATGCTGGCCAAGCTGCAGCGGACTCGGGGCCAACTCCATGGAAGGGCTG GTTGGCATCTTTCCGTCCTGCTTACTTACTTCTGCCATTGCCAAC GTGGATCCCCCCCTTCGGACCCTACGTTGCCTGTGCCCTGTTGGTCTTC CCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCGCTCACGGGCA GCCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG ACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTG CTTGGCTTGCGGAAATGGCAGTTCGATGTGTGTGTGTGATGATGATGACC ATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACA AACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCG GTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC GATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG GTGCGCCGGTTTTTGCTCACCTTCCAGAGAGAGGATTTTGAGAAGAAG GTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTC TTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT CCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA AACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA GATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT ACTGCCTGCCACCTGCAGCAGCTCAATTACTCTCTGGGCCTGGATGCT

Qy 3538 AAGGTGGCACT 3549 Db 3518 AAGGTGGGCATT 3529	RESULT 7 DOGADENCYC LOCUS DOGADENCYC LOCUS DOGADENCYC ACCESSION M94968 VERSION KEYWORDS AGENJY1 CYCLASE VERSION M94968.1 GI:163896 KEYWORDS AGENJY1 CYCLASE AGENJY	SOURCE Canis familiaris cardiac muscle cDNA to mRNA. ORCANISM Canis familiaris Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis. REFERENCE 1 (bases 1 to 4046) AUTHORS Katsushika, S., Chen, L., Kawabe, J., Nilakantan, R., Halnon, N.J.,	Homcy,C.J. and Ishikawa,Y. TITLE Cloning and characterization of a sixth adenylyl cyclase isoform: types V and VI constitute a subgroup within the mammalian adenylyl cyclase family JOURNAL Proc. Natl. Acad. Sci. U.S.A. 89 (18), 8774-8778 (1992) APDLINE 92409599	FEATURES Location/Qualifiers 14046 /organism="Canis familiaris" /db_xref="taxon:9615"	/tissue_type="cardiac muscle" BASE COUNT 743 a 1206 c 1254 g 843 t ORIGIN	Query Match 84.4%; Score 2996.8; DB 4; Length 4046; Best Local Similarity 91.0%; Pred. No. 0; Matches 3233; Conservative 0; Mismatches 307; Indels 12; Gaps 4;	Qy 1 AIGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60	Oy 61 GAACGCAATGGGCAGAACGTTCGCGGCGCCGTGGCACTCGGGCAGTGGCTTCTGCAGG 120	OY 121 CCCCGCPATATGAGCTGCCTCCGGGATGCAGCCAGCCCAGC	Qy 181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCAAGGGCAAG 240	Oy 241 GAGCTGGGGCTGCGGGCAGTGGCCTTGGGGTTCGAGGATACCGAGGTGACAACGACAGCG 300	QY 301 GGCGGGACGGCTGAGGTGCCCCGACGCGCGTGCCCAGGAGTGGGCGATCCTGCTGCCGC 360 1	Oy 361 CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC 420 11 11 11 11 11 11 11	Oy 421 CAGCGGTACTTTTCCACATGAACCAGACCAGCGGCGCTGCTGGTGGTGCTGGTG 480	QY 481 CIGCTCACAGCGGTGCTGCTGGCTTTCCAAGCCGCCCGCCCG
Db 2423	QY 2518 ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCGGCCGC 257 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	2638 TTTGATGGGCTGGACTGCAGCTGGAGGGAGGCTGGCCCTCAAATATATGACCCCTGTG	1	2818 CAGGCATACAACCGGAGGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC 2	OY 2878 CTGGCCCGGGAGCGCCGCAATGATGAACTCTACTATCACTGTGGGTGTGTGGCTGTT 2937	QY 2938 ATGTTGCCTCCATTGCCAACTTCTGAGTTCTATGTGGGAGCTGGAGGCAAACAATGAG 2997	QY 2998 GGTGCCGAGTGCCTGCGGCTGCTCCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC 3057	QY 3058 GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC 3117 	OY 3118 TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT 3177	Qy 3178 GACTACGCCATGCGGCTCATGGACCAGATGAAGCACTCATGACCACTCCTTCAACAAT 3237 	OY 3238 TICCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG 3297	QY 3298 AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG 3357 	OY 3358 GGGGTCCCCGAACCAAATCCAGGTGACCACGACCTGTACCAGGTTCTAGCTGCCAAGGGC 3417	OY 3418 TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGGGCAAGGGGGAGATGACCACCTAC 3477 	QY 3478 TICCTCAATGGGGCCCCAGCAGTTAACAGGGCCCACAAATTCAGCTGAAGGGACC 3537

GTGTAACCGG 600 GTGTAACCGG 724	CATCCTGGCG 6	GGGCCTCTGG 720 	GCGGGCTGCC 780 GCGGGCAGCT 904	CCACTTAACCGT 840 CAACTCAACCGC 964	CTGCACCAAC 900 CTGCACCAAC 1024	CTTTCAGGAG 960 	SCAGCAGGAGCGG 1020 	GACATCAACACA 1080 GATATCAACACA 1204	TGTCAGCATC 1137 TGTCAGCATC 1264	CGCAGGAGCTG 1197 CGCAGGAGCTG 1324	GAGAATCACTGC 1257 GAAAATCACTGC 1384	GGAGGCCCG 1317 	CCATCTCGCTG 1377 	CGGGCGCGTG 1437 	TGATGTGACC 1497 TGACGTGACT 1624	TCGGGCAACA 1557 CCGGGCCACG 1681	AAGCGCAACGCG 1617 GAGCGGAACGCG 1741
36CACTGTTGGCCTGTGCGCCCCTGTTCGTGGGGCTCATGGTGT 	CATAGCTTCCGCCAGGACTCCAIGTGGGTGGTGAGTAACGTGGTGCTGGG 	AGTGCAGGTCGGGGGCGTTTCGCAGCAGCCGGCGCAGCCCCTCTGC 	CCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCAT(CCTCAGCGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGC 	TGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCT(CATTAGCATCTGCACACATATCCAGCAGAGGTGTCTCAGCGCCAGGC 	CGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGC 	GCIGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGA 	AAAAAGAGAGCATGTTCCACAAGATCTACATACAGAAGCATGACATG AAGAAAGAAGACATGATGTTCCACAAGATCTACATCCAGAAGCATGACATG	GTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGC	CATGACCTGAATGACTCTTTGCCCGGTTTGACAAGCTGGCTG	GAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTGT	CCGACCATGCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGGC 	ACCTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGC 	TIGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGTGGTCCAATG 	GGCCAACCACATGGAAGCAGGAGCCGGCTGGCCGCATCCACATCAC 	GCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAA
541 GT(665 GT(01	661 GC 	721 TG 845 TG	781 GT 905 GT	841 GG 965 GG	901 GT 025 GT	961 ACC	021 CT - 145 CT	081 AA 205 AA	38 CT - 65 CT	98 GT 11 25 GT	58 CT - 85 CT	18 G 45 G	78 GT 05 GT	138 CAC	98 CT 	58 CT
oy 5	Oy 6 Db 7	Oy 6 Db 7	Qy 7 Db β	Oy 7 Db 9	Qy 8 Db 9	Oy 9 Db 10	Oy 9 Db 10	Qy 10 Db 11	Oy 10 Db 12	Oy 11 Db 12	Oy 11 Db 13	Oy 12 Db 13	Qy 13 Db 14	Oy 13 Db 15	Oy 14 Db 15	Qy 14 Db 16	Qy 15 Db 16

1677 1801 1737 1861 1797 1921 1857 1981 1917 2041 1977 2101 2037 2161 2097 2221 2157 2281 2217 2341 2277 2401 2337 2461 2397 2521 2457 2581 2517 2641 2577 2637 2761 2697 2821 2757 2701 TACCTCAAGGAGCACCACTTGAGACTTTCCTCATCCTGGGCGCCAGGAAACGGAAA ATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA GAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAAGATGCCCTGAACCCT TACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGTTTC 2102 TACTCAAGGAAGGTGGACCCCCGCTTCGGAGCCTACGTGGCCTGTGCGCTGTTGGTCTTC GGTTCTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTTACTTCTGCCATTGCCAAC CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCATCGGGAAGTTGGCC ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCCAGCCGCC ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG ATTCTGCTGGTGTTTGCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT TATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT CCTGCTGACATCACTGCCTGCCACCTGCAGCAGCTCAATTACTCTCTGGGCCTGGATGCT 1618 1742 1678 1862 1922 1858 1982 1918 2042 1978 2162 2098 2222 2282 2218 2342 2462 2522 1802 1738 1798 2038 2158 2278 2402 2338 2398 2458 2582 2518 2642 2578 2702 2762 2698 2638 ŏ g QY g QΥ g οy QQ Qγ Ω Ω Ω ÓΥ Dp ÓΥ Db QY Db ò DP QY Dp O.Y Db δy Dp QY Db QΥ Db Qγ q QΥ Ω οy a δ

JOURNAL Patent: US 5578481-A 1 26-NOV-1996; FEATURES Location/Qualifiers source 1. 4046 /organism="unknown" BASE COUNT 743 a 1202 c 1257 g 844 t	Query Match 84.3%; Score 2990.4; DB 6; Length 4046; Best Local Similarity 90.9%; Pred. No. 0; Matches 3229; Conservative 0; Mismatches 311; Indels 12; Gaps	QY 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60	Qy 61 GAACGCAATGGGCAGAAGCGTTCGCGGCACCTCGGGCAGGTGGCTTCTGCACG 120	QY 121 CCCGGTATATGAGCTGCCTCCGGGATGCCAGCCCCCCCCC	QY 181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGCGCCCAGGCAAGGCAAG 240	Qy 241 GAGCTGGGGCTGCGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACGCG 300	QY 301 GGCGGACGGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC 360	QY 361 CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC 420	QY 421 CAGCGGTACTITITCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGCTGGTG 480 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	QY 481 CIGCTCACAGGGGTGCTGGCTTTCCAAGCCGCCCCCCCGCCCTCAGCCTGCTAT 540	Oy 541 GIGGCACTGITGCCCGCCCCCCCTGITCGTGGGCCTCATGGTGTGTGTAACCGG 600	OY 601 CATAGCTTCCGCCAGGACTCCATGTGGGTGAGTAACGTGGTGGTGCTGGGCATCCTGGCG 660	Qy 661 GCAGTGCAGGTCGGGGGTTTCGCAGCCCGCGCGCGCGCCCTCTGCGGGCCTCTGG 720	721 TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCCCCATCCGCATGCGGCTGCC		Qy 841 GGTGATGCCTTCCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGCTTCCTCTGCACCAAC 900	QY 901 GTCATTAGCATCTGCACCAGCAGCAGGGTGTCTCAGGGCCAGGCCTTTCAGGAG 960
	QY 2818 CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC 2877	QY 2878 CTGGCCGGGAGCGCCGCAATGATGAACTCTACTATCAGTGGTGAGTGTGGCTGTT 2937	QY 2938 AIGTITGCCTCCATTGCCAACTTCTGGGTTCTATGTGGGGGGGGG	QY 2998 GGTGCCGAGTGCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC 3057	QY 3058 GAGGACCGGTTCCGGCAGCTGGAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC 3117	OY 3118 TCAGGGCTGAACGCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT 3177	QY 3178 GACTACGCCATGCGGGTCATGGAGCACATGAAGCACATGAAGCACTCCTTCAACAAT 3237	QY 3238 TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTCGGGGGTCATCGGGGCTCGG 3297	QY 3298 ABGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG 3357 Db 1411111111111111111111111111111111111	QY 3358 GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC 3417 DD 3482 GGGGTTCCTGACCGAATCCAGGTGACCACGGACTTGTACCAGGTTCTAGCTGCCAAACGG 3541	QY 3418 TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGGCAAGGGGGGAGATGACCACCTAC 3477	OY 3478 ITCCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCACAAATTCAGCTGAAGGGACC 3537 	Qy 3538 AAGGTGGGCACT 3549 Db 3662 AAGGTGGCCATT 3673	129958 LOCUS 129958 LOCUS 129958 LOCUS 129958 LOCUS DEFINITION Sequence 1 from patent US 5578481. ACCESSION 129958 KEYWORDS SOURCE UNKNOWN. ORGANISM UNKNOWN.			REFERENCE 1 (bases 1 to 4046) AUTHORS Ishikawa,Y. TITLE Cloning and characterization of a cardiac adenylyl cyclase

1084	1020	1080	1137 1264	1197 1324	1257 1384	1317 1444	1377	1437 1564	1497 1624	1557 1681	1617 1741	1677	1737 1861	1797 1921	1857 1981	1917 2041	1977 2101	2037 2161
5 GICATIGGCAICTGCACACACTACCCAGCTGAGGICTCTCAGCGCCCAGGCCTTTCAGGAG	1 ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG 	1 CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA	1 AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 	B CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG	B GTCATGACCCTGAATGAGCTCTTTGCCGGTTTGACAAGCTGGCTG	B CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGG	B GCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG	B GTACGTGAGGTGACAGGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGG	B CACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGTGGGCTCCAATGATGTGACC	CTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACA	8 CTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCG 	B TACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGCGCGGCCAGCAGAAAGGGAAA 	B GAGGAGAAAGCCATGCTGGCCAAGCTGCAGCGGACTCGGCCAACTCCATGGAAGGGCTG	ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAGGACTCCAAGGCCTTCCGC	8 CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT	B GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG	CGGAAGGACCATGTGCCCCGGTTTTTGCTCACCTTCCAGAGAGGAGGATTTTGAGAAGAGAGTIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIII	### PACTCCCGGAAGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTC
Dp 102	Qy 96 Db 108	2y 102 Db 114	Qy 108 Db 120	Qy 113 Db 126	Oy 119 Db 132	Oy 125 Db 138	Oy 131 Db 144	Oy 137 Db 150	Oy 143 Db 156	Qy 149 Db 162	QY 155 Db 168	Oy 161 Db 174	Oy 167 Db 180	Qy 173 Db 186	Oy 179 Db 192	Oy 185 Db 198	Oy 191 Db 204	Oy 197 Ob 210
1	→ 1	0 4	5 1	O D	JΩ	O D	3 1	J 1	O D	O D	O D	O D	O D	J D	O D	O D	O D	O D

2758 CGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGGAGATGGAGGAGCTA 2817 TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAAC CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG 2582 CTGCTGAGTCTCTTGGCCAGCTCTGTTTTCCTGCACATCAGTAGCATCGGGAAGTTGGCC GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA CTGCTGAGTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC 2642 ATGATCTTTGTCCTGGGGGTCATTATTTGGTGCTGCTGCTGCTGGCGCCCCCCCAGCACC ATTCTGCTGCTGTTTGCGCTGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC 2818 CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCAACTTC ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG GGTGTCGAGTGCCTGCGGGCTGCTCCAACGAAATCATCGCCGACTTTGATGAGATCATCACGC TATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC QY QY Db g 07 08 0y 0y 0y 0 0 0 δý Q qq Ω g Qγ Ω Óλ qq Ω a

```
273
                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1258
                                                                         393
                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                         481
                                                                                                                                                                                                                         601
                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1198
        a
                        δy
                                     g
                                                                     g
                                                                                        Qγ
                                                                                                   g
                                                                                                                     οy
                                                                                                                                      g
                                                                                                                                                        δy
                                                                                                                                                                     g
                                                                                                                                                                                        δy
                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                         Óλ
                                                                                                                                                                                                                                                                          pp
                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                           δŻ
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                       Ωp
                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ů,
                                                                                                                                                                                                                                                                                          PAT 11-DEC-2001
                                                                                                                                                                                                                                                                                                                                         Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                 3357
                                                                                                                                3417
                                                                                                                                                                 3477
3177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                        CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCCGCTCCCACATCACTGCCCTGGCT
         AAGCCACAGTATGACATCTGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                                                                                GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                TACCAGCTGGAGTGTCGAGGGGTGGTGAGGTGAAGGGCGAAGGGGGAAGTGACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                               TTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                                                                                                                                                                TICCICAATGGGGGCCCCAGCAGITAACAGGGCCCAGCCACAAATTCAGCTGAAGGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 5841;
                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                        Ishikawa,K., Asai,S., Takahashi,Y., Nagata,T. Method for examining ischemic conditions Patent: WO 108108-A 716 22-NOV-2001; School Juridical Person Nihon University (JP) Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 0;
); Mismatches 445;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                          DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                            ىد
                                                                                                                                                                                                                                                                                          5841 bp
WO0188188
                                                                                                                                                                                                                                                                                                                                                                                                                                           1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77.9%; Score 2765; ilarity 87.1%; Pred. No. 0; Conservative 0; Mismatche.
                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Mus musculus"
/db_xref="taxon:10090"
1558 c 1673 g 1396
                                                                                                                                                                                                                                                                                             Sequence 716 from Patent AX305965
                                                                                                                                                                                                                                                                                                                 AX305965.1 GI:17645322
                                                                                                                                                                                                                                                                                                                                                                                                                   1. .5841
                                                                                                                                                                                                                                           AAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                  house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                         AX305965
                                                                                                                                                                                                                                                                                                                                                                                                                                           1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Sim.
Matches 3095;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                               3422
                                                                                                                               3358
                                                                                                                                                               3418
                                                                                                                                                                                3542
                                                                                                                                                                                                                3602
                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
                               3178
                                                3302
                                                                3238
                                                                                3362
                                                                                               3298
                                                                                                                                                                                                3478
                                                                                                                                                                                                                                3538
                                                                                                                                                                                                                                                 3662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
3118
                                                                                                                                               3482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                          RESULT 9
AX305965
                                                                                                                                                                                                                                                                                                                 VERSION
                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                          LOCUS
ò
            g
                               ŏ
                                           g
                                                           δ
                                                                           g
                                                                                          à
                                                                                                          Q
                                                                                                                                         g
                                                                                                                                                                            Dp
                                                                                                                                                                                                            q
                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                            ò
                                                                                                                                                           οχ
                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ōγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
```

```
1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1317
                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                                    569
                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                 629
                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                               689
                                                                                                                                                                                                                                                                                                                                                                                                                              099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960
                                                                             392
                                                                                                           360
                                                                                                                                           449
                                                                                                                                                                       420
                                                                                                                                                                                                       509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421 CAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGGTGGTGGTGGTGGTGTGTTTLTTCCAGATGAACCAGAGCAGCCTCACGCTGGTGGTGTTTTTCCAGATGAACCAGAGCAGCCTCACGCTGCTCATGGCGGTGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                             1110 CTGCTGCTATCGGTGTTGCCCCAGCATGCATGGAGATGAAGAAGACATCAACACA
                                                                333 GAGCTGGGGCTCAGTGGCCTTGGGGTTTGACGACTGAGGTGACCACACCGATG
                                                                                                                             GTGGCACTGTTGGCCTGTGCCGCCCTGTTCGTGGGGCTCATGGTGGTGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                               630 GTGGCCCTGCTGACCTGTGCCTCTGTCCTTTTTGTGGTACTCATGGTGGTGTTGTAACCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721 TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781 GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841 GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGTTCCTCTGCACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1230 CTGTTTGCGGACATTGAGGGCTTCACCAGCCTGGCCTCCCAGTGCACTGCACAGGAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGGGTGCGGAGAATCACTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 GGCGGGACGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                       361 CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCGTGTAC
                                                                                                                                                                                          GCAGTGCAGGTCGCGGCGCTTTCGCAGCAGCCCGCGCAGCCCCTCTGCGGGCCTCTGG
```

_	1350 CTGAG	CTGAGGATCAAGATCTTAGGAGACTGTTACTACTGCGTGTCAGGGCTGCCCGAGGCCCGG 1409	ć	
	1318 GCCGA	ACCATGCCCACTGCTGTGTGGATGGGGGTAGACATGATTGAGGCCATCTCGCTG 1377	δλ	
_	1410 GCAGA		QQ	
	1378 GTACG	14	Qy	2458 CTG
_	1470 GTGCG		Ор	
	1438 CACTG	SCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGGGTCCAATGATGTGACC 1497	δy	
_	1530 CATTG		QD	
_	1498 CTGGC	CTGGCCAACACGAGGAAGCCGGGCTGGCCGCATCCACATCCACATCGGGCAACA 1557	δ i	2578 ATC
_	1590 CTGGC	TAACCACATGGAGGCCGGGGGCGGCCGCGCGTTCTTTTTTTTTT	a d	
	1558 CTGCA	CTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGGCGAACGCG 1617	Š E	2727 TTT
_	1647 CTGCA	AGTACTIGAACGGGGACTAIGAGGIGGAGCCAGGCCGIGGIGGIGGIGAACGCAAIGCG 1706	} ^0	
	1618 TACCT 1707 TACCT	TACCTCAAGGAGCAGCAGCATTGAGACTTTCCTCATCCTGGGCGCCAGCAGAAAGGGGAAA 1677	qa	111 2787 ATT
			Qy	2758 CGC
_			Db	2847 CGC
		179	Οy	2818 CAG
_			qq	2907 CAG
_	1798 CAGAT	185	QY	2878 CTG
			qa	
	1858 GAGGA	ATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG 1917	οy	2938 ATG
_			QQ	
		CGGAAGGACCATGTGCGCCGGTTTTTGCCTCCCTTCCAGAGAGATTTTGAGAAGAAG 1977	Š a	2998 GGT
_	2007 CGTAA	NGGACCATGTGCGCCGGTTCCTGCTCACCTTCCAGAGAGGATCTTGAGAAGAAG 2066	ò	
	1978 TACTC	TACTCCCGGAAGGTGGATCCCGGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTC 2037	7 음	
			Qy	3118 TCA
_		INCLIENTICACTION CONTINUES TO THE TITLE THE TITLE TO THE TOTAL TO THE TITLE TO THE TOTAL TO THE TITLE TO THE TITLE T	. qa	3207 TCT
_		215	Qy	3178 GAC
_			qq	-
	2158 GGTIC		Qy	3238 TTC
_	11111 2247 GGTTC		QO	3327 TTC
	2218 CATAG		ΟŻ	3298 AAG
_	11 11 2307 CACAG		qa	_
	2278 ATGTT	ATGTTCACCTGTAACCACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA 2337	\$ £	3358 GGG
	2367 ATGTT	TACCTGTAATCACACCCCAATAAGGACCTGCGCGCCCGGATGCTGAACTTAACA 2426	ò	
	2338 CCTGC	CCTGCTGACATCACTGCCACCTGCAGCAGCACTCAATTACTCTCTGGGCCTGGATGCT 2397	7 A	
		obsatotencecciecencinenachecicaninaciriobbacibosisci 2480		

CCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCTAC CCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG GCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC TCTGCTGGTGTTTGCGCTGGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC CCTAAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAAGAGGAGATGGAGGAGCTA GTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG TGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC AGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT GGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC

```
CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                          361
                                                                                                                                                                           421
                                                                                                                                                                                                                                                            630
                                                                                                                                                                                                                                                                                            069
                                                                                                                                                                                                                                                                                                                                                                                                                                            901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1081
         121
                                         181
                                                                           241
                                                                                                          301
                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                            781
                     g
                                                                                        ద
                                                                                                                     g
                                                                                                                                                      Db
                                                                                                                                                                                      qq
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                         0
0
0
0
0
         Qγ
                                         Qγ
                                                     g
                                                                      ŏ
                                                                                                        ò
                                                                                                                                         δy
                                                                                                                                                                      δ
                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                       ογ
                                                                                                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                         GSTYMAASGLNASTYDQVGRSHITALADYAMRLMEQMKHINEHSFNNFQMKIGLNMGP
VVAGVIGARKPQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECRGVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ς.
                                                                                          ROD 27-APR-1993
                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 5841)
Yoshimura, M. and Cooper, D. M. Cloning and expression of a Ca(2+)-inhibitable adenylyl cyclase From NCB-20 cells
Proc. Natl. Acad. Sci. U.S.A. 89 (15), 6716-6720 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
          TTCCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGCCAC-AAATTCAGCTGAAGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                        MUSADCYC 5841 bp mRNA linear Mouse adenylyl cyclase type VI mRNA, complete cds. M93422
                                                                                                                M93422.1 GI:191690
adenylyl cyclase; adenylyl cyclase type VI.
Mus musculus cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 445;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77.9%; Score 2765;
87.1%; Pred. No. 0;

    .5841
    /organism="Mus musculus"

                                                                                                                                                                                                                                              /db_xref="taxon:10090"
/cell_line="NCB-20"
96. .3593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KVKGKGEMTTYFLNGGPSS"
                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1558
                                CAAGGTGGGCACT 3549
                                         CAAGGTGGGCATT 3639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1214
                                                                                                                                                                                                                   1379717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best_Local Simi
Matches 3095;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                      RESULT 10
MUSADCYC
LOCUS
DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                   source
                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SASE COUNT
                3567
                                                                                                                                                                         AUTHORS
TITLE
3478
                                3537
                                                                                                                                                                                                          MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Н
                                                 3627
                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                            FEATURES
              g
à
                                à
                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
```

```
1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGCAGGAGCGG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAAGAAGAC---ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              569
                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
180
                                                            240
                                                                                          332
                                                                                                                          300
                                                                                                                                                                                      360
                                                                                                                                                                                                                     449
                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                   509
                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                              629
                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1110 CIGCIGCTATCGGTGTIGCCCCAGCACGTIGCCATGGAGATGAAAGAAGACATCAACACA
                                                                             273 ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCATCAGGAGGCGGGCCCGGGCAGGGGTGTG
                                                                                                                                                                                                      930 AGCGACCCTTCCTTTGGAAGCAGCTCGGTGCTAACGTGGTGCTCTTCCTCTGCAGCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCAGGCAAGGGCAAG
                                                                                                                         333 GAGCTGGGGCTGCGGTCAGTGGCCTTGGGGTTTGACGACACTGAGGTGACCACCACGCATG
                                                                                                                                                                                                                                                    CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                                                                                                  CAGCGGTACTTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                541 GTGCCACTGTTGCCCTGTGCCGCCCCTGTTCGTGGGGGCTCATGGTGGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCCGCGCAGCCCCTCTGCGGGGCCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841 GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAGAAGAACATCAACACA
                                                                                                                                                                                       GGCGGGACGGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
```

1 1 0 7	69 37 29	97 89 57 46	1 0 7	66 37	26 97 86	57 46	17 06	77 66	37 26	97 86	57 46	17 06	77 66	37
	316 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TGACC 14 TGACC 15 CAACA 15 	16		ACTG 18 CCGC 17 	CCT 18	AGCTG 19:	AAG 19 AAG 20	CTTC 20 TTTT 21	GGATT 209	CTGT 21.	GCA 22	CCAAC 22 CCAAC 23	AACA 23
CAO CAO CE		ATG	3C.P	AAAACGGAAA	AAGC	TGAAC TGAAC	GATC 	gagaagaag 	TTGGT CTGGT	5 – S	GTACTCC'	GCTCACGGCA GCTCACGGGTG	CATTGCC	GAATTTA
SCGGA 1-1-1 SCGGA TGCC		AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	rggcaag rggrgaa	AGCCAA TAGCCAA	TCCATG TCCAAG TI	AGATGCC	CAGCATT	틴그린	Grecere	CTGATG CTGATA	CTGTGCTGTG 	S - S	TTCTGCC	GATGCTG
	3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		CCGTGG	TGGCGC	GGCCAA(CAAGGA(CAAGGA(SCACCCAAGATGCCC 	TGCCCG(TGCCCG	GAGAGAC GAGAGAC	TTGCCTG1	CTCCACC	TGATCTG1 	CCCAGCATTGTC 	GTGTTTACT GTGTTCATC	CAGCCCGG
TTGACAA TGACAA 	GGGGGTAGA CATGCGCGT CATGCGCGT CATGCGTGT	GCAGTTCGA: GCAGTTTGA: GGCTGGCCGCGCGCGCGCGCGCGCGCGCGCGCGCGCGCG	AGCCAGG AGCCAGG		GGACACGGGCCAACTCCATGG CCCGGACCAAGGACTCCAAGG 	ACCGGGG	CCATCGA 	CACCTTCCAGAGAGAGAT' 	CTACGT	TTTCCCACACTCCACCCTGATGCT" 	CACCGTGCT	9-9	rccrgcrrgr 	GCTGTGC
CCGGT CCGGT CTACT FTACT		CCTTGGCTTGCGGAAATGGCAGTTCGATGT [0 – 0		당 등 등	GGCATTGATGATTCCAGCAAAGACAACCGGGG 	CTGAGCCGTGCCATCGATGCCCG 	TTTGCTCAC	CCCGGAAGGTGGATCCCGGTTCGGAGCCTACG 	CTAATTT CTTGTGTT	GCTAATCAC	SCAACGTCTGTC 	5 - 5	TACGGA
CTCTT CTCTT CTCTT 3GGGA 11 11	GTGTG GTGTG TGAAT	TTGGCTTGCGGAATG TTGGCCTACGGAATG TGGAAGCCG	GACTACG 	GCTGCCAAGCTGCAGC	AAGCCATGCTGGCCAAGCTTCA GATGGGTTCCTGATCGTGCCTT 	rccagca rcragca		GGTTTT GGTTCC	CCCGCT CCTCGCT	CATCCAGCTTC 	corecrecrec corecrerec	TAAGGCCCTGC	CATCTTTCCG	ACCCCCA
	GACAGGTG	CTTGGC	AACGGGAACGGGAACGGGGGGGGGGGGGGGGGGGGGGG	5 E 5=	5 8=8	GATGAT	FGGATGAGTTC	GACCATGTGCGCCGGTT	GTGGAT(CAGTTGGC CGGTTGGA	TAACCACA
ACCCT ACCTT ATCAA ATCAA	SAGGT SAGGT SAGGT		CAGTACCTG		GCGATGC	rn rn	SAGG1 IIIII SAGG1	GGACCAT 	CCGGAAG ACGGAAA	CATCTGCT	CCAGCATCT 	rergrece 	CACCGCA CACCGCG	CACCIGI
GTCAT 	GTAC GTAC GTAC GTGC	CATT	CTGCA	TACCT	GAGGA(ATGCC(CAGATO CAGATO	GAGGAT(GAAGAT(CGGAAGC	TACTC	TGCTT(TGCTT(TATGC(TATGC(GGTTCT	CATAGO	ATGTT
1198 1290 1258 1350	7 7 7	1438 1530 1498 1590	1558 1647 1618	707	1767 1738 1827	1798	1858	1918	1978	2038	2098	2158	2218	2278
60 00 00 00 00 00 00 00 00 00 00 00 00 0	6 6 6	Oy Oy Oy	O O	g 6	g & g	à q	oy Og	QY Dp	oy Db	oy Db	Oy Dp	oy eg	Qy Db	Qy

GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGCC CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC CTGGCCCGGGAGCGCCGCAATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTT ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG CCTGCTGACATCACTGCCTGCCACCTGCAGCAGCTCAAFTACTCTCTGGGCCTGGATGCT CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC ATTCTGCTGGTGTTTGCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC TTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACG g δ QQ QY Db oy ob Db Qy g QY Up ΟŸ QQ oy oy ob 0y 0b Ωp δy Ω Óγ q Qγ Db οy ద Ωy g δ QQ ŏ

Mon

```
ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGGGG 1020
                                                                                                                                                                                                                                                               CTGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA 1080
                                                                                                                                                                                                                                                                                                                                                              GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTG 1437
                                                                                                                                                                                                                                                                                          CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCCAGTGCACTGCGCAGGAGCTG
                                                                                                                                                                                                                                                                                                                                                       CTCCTCATGGCTGTACTGTTGACCTTCCACGCCGCCCTGCCCTCAGCCTCAGCTTAT
                                               CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCCATCCTGGCG
                                                                                                                                                                                                    GTCATTAGCATCTGCACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                     CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGACCATGCCCACTGCTGTGGAGATGGGGGGTAGACATGATGAGGCCATCTCGCTG
                 GTGGCACTGTTGGCCTGTGCCGCCGCCCTGTTCGTGGGGGCTCATGGTGGTGTAACCGG
                                                                                                         TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCCATCCGCATGCGGGCTGCC
                                                                                                                                       GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                     GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                530
                 541
                               590
                                               601
                                                            650
                                                                                          710
                                                                                                                       770
                                                                                                                                       781
                                                                                                                                                       830
                                                                                                                                                                      841
                                                                                                                                                                                    890
                                                                                                                                                                                                   901
                                                                                                                                                                                                                  950
                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                1010
                                                                                                                                                                                                                                                              1021
                                                                                                                                                                                                                                                                             1070
                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                          1130
                                                                                                                                                                                                                                                                                                                         1138
                                                                                                                                                                                                                                                                                                                                       1190
                                                                                                                                                                                                                                                                                                                                                      1198
                                                                                                                                                                                                                                                                                                                                                                     1250
                                                                                                                                                                                                                                                                                                                                                                                     1258
                                                                                                                                                                                                                                                                                                                                                                                                   1310
                                                                                                                                                                                                                                                                                                                                                                                                                   1318
                                                                                                                                                                                                                                                                                                                                                                                                                                 1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1610
                                                                           199
                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1490
                            Db
                                                                                        g
                                                                                                                   g
            δ
                                             δý
                                                         Q
                                                                        δy
                                                                                                                                                   Ω
                                                                                                                                                                                g
                                                                                                                                                                                                              g
                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                       oy
Oy
                                                                                                                                                                                                                                                                                                                                   ΩD
                                                                                                        οŽ
                                                                                                                                       δý
                                                                                                                                                                     δŽ
                                                                                                                                                                                                  δý
                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                               δý
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                 δý
                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                     4
                                                                                                                               14-FEB-2001
                                           GGAGTTCCTGACCGAATACAGGTGACTACGGACCTATACCAGGTTCTAGCTGCCAAGGGC 3506
                                                                                                                                                                                                                                                                                                                              GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                         349
                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                          CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                    Gaps
              1 ATGICATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                       181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCAGGCAAGGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                  GAGCTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCGGGACGGCTGAGGTGGCGCCCGACGGTGCCCAGGAGTGGGCGGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCGGTACTTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGTGGTGGTGGTGGT
                                                                                                                               PAT
                                                                                                                                                                                                                                                                     Length 4131;
                                                                                                                                                                                                          uses therefor
                                                                                                                               linear
                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                   463;
                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                          and
                                                                                                                               DNA
                                                                                                                                                                                                                                                                    Score 2751.2;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                       Tang, W.-J. and Gilman, A.G. Soluble mammalian adenylyl cyclase ar Patent: US 6107076-A 11 22-AUG-2000; Location/Qualifiers
                                                                                                                               4131 bp
US 6107076.
                                                                                                                                                                                                                                               924
                                                                                                                                                                                                                              1. .4131
/organism="unknown"
1190 c 1182 g
                                                                                                                                                                                                                                                                                   ;
                                                                                                                                      patent
                                                                                                                                                    GI:12821189
                                                                                                                                                                                                                                                                    77.5%;
imilarity 86.7%;
Conservative
                                                                                                                                      11 from
                                                                          CAAGGTGGGCACT 3549
                                                                                  Unknown.
Unclassified.
                                                                                                                                     Seguence 11
AR106659
AR106659.1
                                                                                                                                                                                                                                              Ø
                                                                                                                               AR106659
                                                                                                                                                                   Unknown
                                                                                                                                                                                                                                                                             Local Sim
les 3080;
                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                    Query Match
                                                                                                              RESULT 11
AR106659
LOCUS
DEFINITION
                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                            Best Loca
Matches
               3418
                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                           ORGANISM
3447
                                                           3567
                                                                                        3627
                                                                                                                                                                                                 AUTHORS
TITLE
                              3507
                                            3478
                                                                          3537
                                                                                                                                                                                                                                                                                                                                             116
                                                                                                                                                                                                                                                                                                                                                                          173
                                                                                                                                                                                                                                                                                                                                                                                                         233
                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                        293
                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                           KEYWORDS
SOURCE
                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                     ORIGIN
g
              δ
                           g
                                                       g
                                                                        δ
                                                                                    q
                                           ò
                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                           ά
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

1129 1137

840

889 900

780 829

999

709

9 649 720

769

096

1197

1257

1377

1489 1497 1549 1617 1669

```
RATADCYB

Ratus norvegicus adenylyl cyclase type VI mRNA, complete cds.
M96160.
M96160.1 GI:202718

adenylate cyclase; adenylyl cyclase type VI.
Ratus norvegicus (strain Sprague-Dawley) adult liver, kidney, heart cDNA to mRNA.
Ratus norvegicus
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3477
                    2809
                                       2817
                                                          2869
                                                                             2877
                                                                                                                    2937
                                                                                                                                      2989
                                                                                                                                                         2997
                                                                                                                                                                           3049
                                                                                                                                                                                                3057
                                                                                                                                                                                                                  3109
                                                                                                                                                                                                                                     3117
                                                                                                                                                                                                                                                        3169
                                                                                                                                                                                                                                                                           3177
                                                                                                                                                                                                                                                                                              3229
                                                                                                                                                                                                                                                                                                                 3237
                                                                                                                                                                                                                                                                                                                                                      3297
                                                                                                                                                                                                                                                                                                                                                                                            3357
                                                                                                                                                                                                                                                                                                                                                                                                               3409
                                                                                                                                                                                                                                                                                                                                                                                                                                 3417
                                                                                                                                                                                                                                                                                                                                                                                                                                                    3469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3529
 2757
                                                                                                                                                                                                                                                                                                                            3230 GACTACGCCATGCGGCTTATGGAGCAAATGAAACACATCAACGAACACTCTTTCAACAAC 3289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGGAGATGGAGGAGCTA
                                                                             3110 GAGGAGAGATTCCGGCAGCTGGAGAAGATCAAGACCATCGGTAGCACTACATGGCCGCC
                                                                                                                                                                                                                                                                                      3178 GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                                                                                                                                                                                                                                                                                                             AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3478 TTCCTCAATGGGGCCCCCAGCAGTTAACAGGGCCCCA--GCCACAAATTCAGCTGAAGGGA
                                                                                                                                                                                                                                                                           3118 TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT
                                                                                                                                                                                                                                                                                                                                                       3238 TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                                                                                                                                                                                                                                                                                                                                 CTGGCCCGGGAGCGCCGCAATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTT
                                                                                                                                                                                                                                      GAGGAGCGGTTCCGGCAGCTGGAAAAAATATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3590 CCAAGGTGGGCACT 3603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
RATADCYB
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                             3298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                        2758
                                                                                                                    2878
                                                                                                                                                                                                                                                                                                                                                                                                                3350
                                                                                                                                                                                                                                      3058
                    셤
                                                         QQ
                                                                           δy
                                                                                             g
                                                                                                                    Ω
                                                                                                                                 qq
                                                                                                                                                      QY
                                                                                                                                                                         g
                                                                                                                                                                                                Qy
Db
                                                                                                                                                                                                                                  Q
Dp
                                                                                                                                                                                                                                                                          Óγ
                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                 Óγ
                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
  \tilde{Q}
                                       δ
```

us-09-750-240-5.rge

```
301
                                                                                                                                           410
                                                                                                                                                                        421
                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                            530
                                                                                                                                                                                                                                                                                                                     590
                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                     710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1198
    241
                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                      g
                                                                           g
                                                                                                          Q
Dp
                                                                                                                                                                δy
                                                                                                                                                                                             8
                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                ΩY
                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                              ο
                                                                                                                                                                                                                                                                                               /4...3530
//citation=[2]
/citation=[2]
/citation=[2]
/codon_start-1
/codon_start-1
/evidence=experimental
/product="adenylyl cyclase type VI"
/product="adenylyl cyclase type VI"
/protein_id="AAA40678.1"
/b_xref="G1:202719"
/translation="YPIPVARESGERSSMSWFSGLIVPKVDERKTAWGERNGORRPRO
ATRARGFCAPRYMSCLKNVEPPSPTPAARTRCPWODEAFIRRAGPGROVELGLRSVAL
GFDDTEVTPPRGTABVANCESGERSSMSWFSGLIVPKVDERKTAWGERCRONN
ASSITILMAVLUMAVLIFHAAPALDQPAYVALITCASVLEVVLMVVORRSFRQD
SMWVVSYVLGILAAVQVGGALAANPRSFSAGLWCPVFFVITIYTLLPIRRAAVLSG
GLGSTLLLIAWHLINNGDPFFUMCLOANVVEFCTTNAIGVCTTIPAEVSGROAFOGTR
GILGSTLLLIAWHLINNGDPFFUMCLOANVVEHCTNAIGVCTTIPAEVSCROAFOGTR
GLGLSTLLIAWHLINNGDPFTUMCLOANVVEHCTNAIGGOCTORTIS
LRADIEGFTSLASQCTAQELVATNAIGNCTNAIGHORYSCHICGLRYCYCSCLEP
ARADHAHCVEMGYDMISALSLYREVTGVNVNMYCHIGGENAYLKOCTIETFILIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ASOKRKEEKAMLVKLORTRANSMEGIMPRWVDDRAFSRTKDSKAFROMGIDDSSKENR
RODALNPEDEDVDEFLGRADARSIDQLRKDHYRRFLLTFORDSEDLEKTSRKVDBRG
AYOALLWFCFICTRAPPARALICITYRGIFLLLWYLLGAVCSCGSFPNAL
ORLSRSIVRSRVHSTAVGVFSVLLVFISAIANKFTCSHTPLRTCARMLNLTPSSDVTA
CHRQLNYSLGLEAPLCEGTAPTCSPPSYFVGSVLLGLLGASSYFLHISSIGKLVMTV
LGFIYLLLLLLGPPATTFDNYDLLLSVHGLASSNETPGCLDCPAVGRVALKYMPVIL
LVFALLLILLGPPATTFDNYDLLLSVHGLASSNETPGCLDCPAVGRVALKYMPVIL
LVFALLILLLGPPATTFDNYDLALGASSNETPGCLDCPAVGRVALKYMPVIL
LVFALLILLLGPPATTFDNYDLALGASSNETPGCLAGAYNRTLYHNILPKDVAAHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LARERRNDELYYGSCECVAVMFASIANFSEFYVELEANNEGVECLRLLMEIIADFDEI
ISERRFROLEKIKTIGSTYMAASGLNASTYDOVGRSHITALADYAMRLMEQMKHINEH
SLANFQMKIGLNMGPYVAGVIGARKPOYDIMGNTVNVSSRMDSTGVPDRIQVTTDLYQ
VLANGYQLECRGVYKRGEMTTYFLNGGPSS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                    and Iyengar, R. hormone-stimulated
                            Multiple mechanisms underlying desensitization of the liver adenylyl cyclase system. Structure and cAMP regulation of liver adenylyl cyclases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCAGGAGGGCTGGCCCGGGAAGGGGTGTG 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 4131;
                                                                         2 (bases 1. to 4131)
Premont, R.T., Chen, J., Ma, H.W., Ponnapalli, M. and Iyeng.
Two members of a widely expressed subfamily of hormone-adenylyl cyclases
Proc. Natl. Acad. Sci. U.S.A. 89 (20), 9809-9813 (1992)
93028552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   463; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                           /strain="Sprague-Dawley"
/db_xref="taxon:10116"
/tissue_type="liver, kidney, 1/dev_stage="adult"
                                                                                                                                                                                                                 /organism="Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77.5%; Score 2751.2;
86.7%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                       Location/Qualifiers
to 4131)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                   ,4131
                                                                     Thesis (1992)
 1 (bases 1 Premont, R.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ಸ
                                                                                                                                                                     1409703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 3080;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
             AUTHORS
                                                                     JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                       MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            173
                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
```

```
1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAAGAGAC---ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTTTGCCGACATCGAGGGCTTCACCAGCCTGGCCTCCCAGTGCACTGCCCAGGAACTG 1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCCGCAGTTACATCCAGGCCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAAAGGAAGACATGATGTTCCACAAGATTTACATCCAGAAGCATGACAATGTCAGCATC 1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1369
                                                                                                                                                                                                                                                                                                                                                                                            999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           769
                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                             649
                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         889
 300
                                                                360
                                                                                             409
                                                                                                                              420
                                                                                                                                                              469
                                                                                                                                                                                             480
                                                                                                                                                                                                                             529
                                                                                                                                                                                                                                                                                            589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGTTCCTCTGCACCAAC 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCATTAGCATCTGCACACACACACAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG
                                                                                        GCCGTGCAAGTCGGGGGTGCCCTGGCAGCCAACCCACGCAGCCCCTCAGCAGGCCTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             293 GAGCTGGGGCTGCGGTCAGTGGCCTTGGGTTTTGATGACACTGAGGTG---ACCACACCG
                                                                GGCGGGACGGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                              361 CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                              CAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTG
                                                                                                                                                                                                                                                             541 GTGGCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGCTCATGGTGGTGTTTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                             CATAGCTTCCGCCAGGACTCCATGTGGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGACCCGCGCAGCCCCTCTGCGGGCCCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCCTGTGTTTTTTTTTATATACATCGCTCCTCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGG
```

1377 1429 1437 1497 1549 1557	161 166 167 172 173	9 4 6 9 1	196 197 202 203 203	2097 2149 2157 2209 2217 2269	2277 2329 2337 2389 2397 2449
GCCGACCATGCTGTGGGGGATAGACATGATTGAGGCCATCTGCTG GCCGACCATGCCATGTGGAGATGGGGGTAGACATGATTGAGGCCATCTGCTG GTACGACCATGCCACTGTGGAGATGGGGGTAGACATGATCGAGGCCATCTCCCTG GTACGTGAGGTGACTGTGAATGTGAACATGCGCGTGGGCATCCACGGGGCGCTG HIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIHI	CTGCAGTACCTGAACGGGGACTACGAACTGGGGCCGGGGGGGG	ATGCCGGATGGGTTCCTGATCGTGCCTTCTCCGGACCAAGGACTCCAAGGCCTTCCG	GAGGATGACGACGACGATTTCTGGGCCATCGATGATGCCCGAAGCATCGACCAGCCAG	TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT	CATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTTACTTTCTGCCATTGCCAAC [
1318 1370 1378 1430 1490 1498	55 61 67 67 73	20000	91 97 97	2038 2090 2098 2150 2158 2210	2218 2270 2278 2330 2338 2390 2398
	oy oy	o o o	00 Oy OO	00 00 00 00 00 00 00 00 00 00 00 00 00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

CCCCTGTGTGAGGCACCGCACCTACCACCTGCAGTTTCCTGGGGAGTGTG TICCTCAATGGGGCCCCAGCAGTTAACAGGGCCCA--GCCACAAATTCAGCTGAAGGA CTGCTGAGTCTTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC TITGAIGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAAIAIATGACCCCTGTG ATTCTGCTGGTGTTTGCGCTGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC ATGITIGCCICCATIGCCAACTICTCIGAGITCTATGIGGAGCIGGAGGCAAACAATGAG GGTGCCGAGTGCCTGCGGCTGACGAGATCATCGCTGACTTTGATGAGATTATCAGC GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT TICCAGATGAAGATIGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACG GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC CTGGCCCGGGAGCGCCGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGGCTGTT GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT g ò g Q D QY Db O.Y D.D Oy Db QQ δy QQ οy g g Qγ Óλ

25

Mon Mar

```
GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1138
 61
                                 259
                                                                   121
                                                                                                   316
                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1213
                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                        g
                                                                   δ
                                                                                            g
                                                                                                                            οy
                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /LTGRISTATION - "MSWESGLLVPKVDERKTAWGERNGOKRPROATRARGECAPRYMS
/LTGRISTATION - "MSWESGLLVPKVDERKTAWGERNGOKRPROATRARGECAPRYMS
CLKNVEPEPSETPAATRCPWODEAFTRRAGGGGGGGTGKUGLRSVALGEDDTGYTPWGTA
EVAPDTSPRSGPSCWHRLAQVFGSKOFRSAKLERLYORYFFONNOSSLTLLMAVLVLLL
MAVULTFHAAPALDGPAYVALLTCASVLFVVLMYVCNRHSFRODSMWYSYVVLGILA
AVOWGGALAANPRESBAGIMCPVFFYVITYTLLPIRRRAAVLSGLGLSTLHLILAWHL
NNGDPFLMKOLGANVVLFLCTNAIGVCTHYPAEVSORQAFGETRGYIGARLHLQHENR
OOERLLLSVLEOHVAABAREDINTKREDMMFHRTYIOKHDNYSTLFADIEGFTSLASO
CTAGELVMTLNELFARFDKLAAENHCLRIKILGCYLGLRKWOFDWSNDYTLANHMEAGGR
AGRIHITRATLQYLNGDYFEVDFGRGFRNGYLKEQCIETFLLIGASQKRKEEKAMLYK
LORTRANSMEGLMPWNPDRAFERTROSKAFROMGIDDSSKENRGAODALNPEDEVDE
FLGRAIDARSIDGLKKOHVRRFLLTROREDLEKKYSRKVDPRFGAYVACALLYPFFILG
FLORTBARSLALLLVYVLICANCSCGSFFPNLLORLEVEFIL
FLORTBARSLALLLVYVLICANCSCGSFFPNLLORLEVEFILE
FLORTBARSLALLLYFVREDLENVYVLICANCSCGSFFPNLLQRLSSTYNSSYHS
TAVOVFFHSALLIGITYGERFELLLVYVLLICANCSCGSFFPNLLQRLSSTYNSSYHS
TAVOVFFHSALLLGYTRGERFELLNYVLLICANCARAKALNITPSDYTACHLROINYSLGLEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ESTARLDFLWKLQATGEKEEMBELQAYNRRLLHNILPKDVAAHFLARBRRNDELYYÖS
GCCVAVWFASTANFSEFYVELBANNGFYBCLRLIDEIJADFDEIJSBERRQLERIKT
IGSTYMAASGLINASTYDQVGRSHTTALADY ARKLMEDWKHINEHSFNRFOMK IGLING
PVVAGVIGARKPQYDIWGNTVNVSSRMDSTGVPDRIQVTTDLYQVLAAKGYQLECRGV
                                                                                                                                                 RATADC 6036 bp mRNA linear ROD 12-AUG-1994 Rattus norvegicus adenylyl cyclase type VI mRNA, complete cds. L01115 L01115 adenylyl cyclase; adenylyl cyclase; adenylyl cyclase; adenylyl cyclase; adenylyl cyclase; rattus norvegicus hepatoma cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLCEGTAPTCSFPEYFVGSVLLSLLASSVFLHISSIGKLVMTFVLGFTŸLLLLLLGPP
ATIFDNYDLLLSVHGLASSNETFDGLDCPAVGRVALKYMTPVILLVFALALYLHAQQV
                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                         Krupinski,J., Lehman,T.C., Frankenfield,C.D., Zwaagstra,J.C. and
Watson,P.A.
3530 TTCCTCAATGGGGGCCCCAGCAGTTAGCAGAGCGCACGAGTGGAAATTCAACCAAAGGGA 3589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostu
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60
                                                                                                                                                                                                                                                                                                                                                                         Molecular diversity in the adenylylcyclase family. Evidence eight forms of the enzyme and cloning of type VI J. Biol. Chem. 267 (34), 24858-24862 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 6036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77.3%; Score 2743.2; DB 10;
llarity 86.5%; Pred. No. 0;
Conservative 0; Mismatches 468; I)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
/product=adenylyl cyclase type VI"
/protein_id="AAA40676.1"
/db_xref="GI:202713"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Rattus norvegicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:10116"
/cell_line="H35 Reuber"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="hepatoma"
199. .3699
/EC_number="4.6.1.1"
/note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VKVKGKGEMTTYFLNGGPSS'
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
1..6036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1750
                                                                                                                                                                                                                                                                                                                       (bases 1 to 6036)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1657 c
                                 3549
                                                 CCAAGGIGGGCACT
                                 3536 CCAAGGTGGGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 3075; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1223
                                                                                                                                                                                                                                                                                                             Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                1332969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    polyA_site
COUNT
                                                                                                                                                                 DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                        ORGANISM
                                                                 3590
                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                   RESULT 13
                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE CC
ORIGIN
                                                                                                                                 RATADC
g
                                 οy
                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

```
973 GTGCTCAGTGGCCTGGGTCTTTCCACCTGCATTTGATTTTGGCCTGGCATCTCAACAAT 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1033 GGTGACCCCTTCCTTTGGAAGCAGCTCGGTGCTAACGTGGTGCTCTTCCTGTGCACCAAT 1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAAAGAAGAC---ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                          612
                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC 780
                                  315
                                                                       180
                                                                                                           375
                                                                                                                                            240
                                                                                                                                                                                 435
                                                                                                                                                                                                                                                        492
                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                               552
                                                                                                                                                                                                                                                                                                                                                                        420
120
                                                                                                                                                                                                                     GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG 300
                                                                                                                                                                                                                                                                                                                                                                      GGTGATGCCTTCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGCTGCTGCACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541 GTGGCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGGCTCATGGTGGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCCCGCGCAGCCCCTCTGCGGGCCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG
                                                                                                                                                                                                                                                                                                                                 CAGCGGTACTTTTCCAGATGAACCAGAGCCTGACGCTGCTGCTGGCGGGGGGTGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   613 CAGCGGTACTTCCTCCAGATGAACCAGAGCAGCCTCACGCTGCTCATGGCGGTGCTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                   181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGCGCCCAGGCAAGGGCAAG
                                                                                                                                                             376 ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCAGGAGGGCTGGCCCGGGAAGGGGTGT
                                                                                                                                                                                                                                          436 AAGCTGGGGCTGCGGTCAGTGGCCTTGGGTTTTGATGACACTGAGGTG----ACCACCC
                                                                                                                                                                                                                                                                                              GGCGGGACGCTGAGGTGGCGCCCGACGCGGTGCCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGGCGCCAGGCCTTTCAGGAG
                                                                     CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCTGCGGGGCCCC
```

2337 2532 2592 2652 2517 2712 2772 2637 2832 3012 3117 3312 3177 3372 3432 3492 2397 2457 2577 2697 2892 2757 2952 2817 2877 3072 2937 3132 2997 3192 3057 3252 3237 3297 3357 CACAGCACGGCTGTTGGAGTCTTCTCGGTTCTGCTTGTGTTCATCTCTGCCATTGCCAAC 2472 CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC CGCCTAAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTA AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG TTTGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC ATGTTTGCCTCCATTGCCAACTTCTGTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT TICCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTTCGG CCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC 2413 2773 2278 2473 2533 2593 2458 2653 2518 2713 2578 2638 2833 2698 2893 2758 2953 2818 3013 2878 3073 2938 3133 3193 3253 3493 2338 2398 2998 3058 3118 3313 3178 3373 3238 3433 3298 g οy g οy q Qγ a ò q δ g Ωý qq δý 염 Qγ 임 οy a οy qq ογ QΩ S S δ qq Q g ÓΫ g δ g δ Db ò g

Db

οy

Db

δŽ

g

g ò

ò

3

138

9 78

198

258

237

378

354

438

414

318

294

558

534

498

474

618

594

678

654

798

774

714

828

834

918

```
YDLLLGVHGLASSNETFDGQDCPAVGRVALKYMTPVILLVFALALYLHAQQVESTARL DFLLGVHGLASSNETFDGLESTARL DFLKKLQATGEKEEMEELYYQSCECVAV MFASIANFSEFYMELEANNEGVECLRLLHNILPKDDAIISEFRQLEKITJGSTYM AASGINASTYDQVGESHITALADYAMRLMEDNKHINEHSFNNFQMKTGLNMGPVVAGV IGARKPQYDIMGNTVNVSSRMDSTGVPDRIQVTDLYQVLAAKGYQLECRGVVKVKGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTTCGCAGCAGCCCGCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTA 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                              CAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCCTGTACCAGCGGTACTTTTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACA
                                                                                                                                                                                                                                                                                               CTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGTGAACGCAATGGGCAGAAG
                                                                                                                                                                                                                                                                                                                                      1 CTCCTGGTTCCCAAAGTGGATGAACGGAAAACAGCTTGGGGGGAACGCAATGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                       CGTTCGCGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACGCCCCGCTATATGAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCCGGGATGCAGAGCCACCCAGCCCCAGCCCTGCGGGCCCCCCTCGGTGCCCCTGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGCCCGACGCGCTGCCCAGGAGTGGGCGATCCTGCTGCCGCCGTTTGGTGCAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAACCAGAGCAGCCTGCTGCTGGTGGCGGTGCTGGTGCTGCTCACAGCGGTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          475 TTGACTTTCCACGCTGCGCCTGCCTCAGCCTCAGCCTGCTTACGTGGCCCTGCTGACCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCGCCCCTGTTCGTGGGGCTCATGGTGTGTAACCGGCATAGCTTCCGCCAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCCATCCTGGCGGCAGTGCAGGTCGGGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGCTTTCCAAGCCGCACCCGCCCGCCTCAGCCTGCCTATGTGGCACTGTTGGCCTGT
                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                       Length 3465;
                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                    Score 2734; DB 10;
Pred. No. 0;
0; Mismatches 430;
                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                      772
                                                                                                                                        6
                                                                                                                                      980
                                                                                                                                                                                                  77.0%;
nilarity 87.3%;
Conservative 0
                                                                                                                                   ပ
                                                                                                                   GEMTTYFLN
                                                                                                                                      866
                                                                                                                                                                                                                              Similarity
                                                                                                                                        ಡ
                                                                                                                                                                                                                           Best Local Sim
Matches 3031;
                                                                                                                                                                                                         Query Match
                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                               19
                                                                                                                                                                                                                                                                                                                                                                                    79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           775
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /EC_number="4.6.1.1"
/citation=[2]
/citation=[2]
/citation=[1]
/citation=[1]
/coton_start=1
/cot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRATLOYLNGDYEVEPGRGGERNAYLKEQCIETFLILGASOKRKEEKAMJAKLOFTRA
SMEGLMPRWYDDRAFSKTROSKAFROMGIDDSSKDNRGAODALNPEDEVDEFLGRAI
DARSIDQLAKDHVRREYLTFOREDLEKKY STRVUPPRGAYVACALLYFCFICFIQLLV
FPYSTLILGIYAAIFLLLLVTVLICAYCSGSFPKALORLSRNIYRSKGHSTAVGIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                ROD 27-APŘ-1993
cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SVLLVFISAIANMFTCNHTPIRTCAARMLNLTPADVTACHLQQLNYSLGLDAPLCEGT
APTCSFPEYFVGNVLLSLLASSVFLHISSIGKLAMTFILGFTYLVLLLLGPPAAIFDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Multiple mechanisms underlying desensitization of the liver adenylyl cyclase system. Structure and cAMP regulation of liver adenylyl cyclases
Unpublished (1922)
2 (bases I to 3465)
Premont, R.T., Jacobowitz, O. and Iyengar, R.
Lowered responsiveness of the catalyst of adenylyl cyclase to stimulation by GS in heterologous desensitization: a role for adenosine 3',5'-monophosphate-dependent phosphorylation
Endocrinology 131 (6), 2774-2784 (1992)
                                                                                                               3477
                                                                                                                                                                                                    TTCCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGC--CACAAATTCAGCTGAAGGGA 3535
                                                                                                                                                                                                                                                TTCCTCAATGGGGGCCCCCAGCAGTTAGCAGAGGCCCAGCAGTGGAAATTCAACCAAAGGGA 3732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleosto
Sciurognathi; Muridae; Murinae;
                                              GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                            TACCAGCTGGAGGGGTGGTCAAGGTGAAGGGCGAAGGGGGGAGATGACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UNC variant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                   3465 bp mRNA linear cyclase type 6 mRNA, partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cell_line="S49 lymphoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .3465
/organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
1 (bases 1 to 3465)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M96653.1 GI:191726
adenylyl cyclase type VI.
Mus musculus cDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus adenylyl
                                                                                                                                                                                                                                                                                            3549
                                                                                                                                                                                                                                                                                                                 CCAAGGTGGGCACT 3746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /partial
                                                                                                                                                                                                                                                                                            CCAAGGTGGGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Premont, R.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1332848
                                                                                                                                                                                                                                                                                                                                                                                                                         MUSADNLCYC
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
MEDLINE
PUBMED
                         3358
                                                                3553
                                                                                                            3418
                                                                                                                                                                                                       3478
                                                                                                                                                                                                                                              3673
                                                                                                                                                                                                                                                                                          3536
                                                                                                                                                                                                                                                                                                                                      3733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
```

		•																
978 954		1095	1155	121	1275	1335 1314	1395 1374		1515 1494		1635 1614	9 9	1755	1815 1794	1875 1854	1935 1914	1995	05
Y 919 CACTATCCAGCAGAGGTGTCTCAGGCCCAGCCCTTCCAGGAGCCCGCAGTTACATCCAG	979 GCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGGGGCTGCTGCTGTCGGT 	/ 1039 CCCCAGCACCATGCATGCAGATGAAAGAAGACATCAACAAAAAAAA	1096 TTCCACAAGATCTACATACAGAAGCATGACAATGT 	1156 GGCTTCACCAGCCTGGCATCCCAGTGCACTGGCGCAGGAGCTGGTCATGACCC 	1216 CTCTTTGCCGGGTTTGACAAGCTGGGTGCGGAGAATCACTGCCTGAC 	1276 GGGGACTGTTACTACTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGC	1336 TGTGTGGAGATGGGGGTAGACATGATGAGGCCATCTCGCTGGTACGTGGGGGGACAGGT	1396 GIGAATGIGAACATGCGCGTGGGCATCCACAGCGGGGGGGGGG	1456 TTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGAC 	1516 GCAGGAAGCCGGCTGCCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGG	1576 GACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGGGCAACGCGTACCTCAAGGAGCAGCAC	1636 ATTGAGACTTTCCTCATCCTGGGCGCCAGCCAGAAACGGAAAGAGGAAAAGGCTGCTG 	1696 GCCAAGCTGCAGCGCACTCGGGCCAACTCCATGGAAGGCTGATGCCGCGATGGTTCCT 	1756 GATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATGT :	1816 TCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGGATGAG :	CGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGC 	GAGAAGAAGTACTCCCGGAAGGTGGAT 	NGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCACCTTGTTCATC
Oy Dp	Q D	g g	Oy B	Oy Pb	Qy Db	QQ QD	Qy Dp	Qy Dp	Oy Dp	ç d	Oy Dp	Oy Gp	δ d	δ do	QQ Dp	O. D. D.	Qy Db	οy

2034 2115 2175 2295 2094 2154 2355 2415 2274 2334 2394 2475 2454 2535 2514 2595 2574 2655 2715 2775 2835 2895 2955 2634 2694 2754 2814 2874 3015 3075 3135 2934 2994 3054 CIGCIGCIAAICACCGIGCIGATCIGIGCIGIGIACICCGIGGITCCCGIAAG CAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTG 2455 AGCTCTGTCTTCCTACACATCAGCAGCATCGGCAAGCTGGCCATGACCTTCATCTTGGGG ATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCAC ACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTGACATCACTGCC 2416 ATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTTTGGCC 2395 GCACCCACCTGCAGCTTCCTGAGTACTTCGTCGGGAACGTGCTGAGTCTTCTAGCC AGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGG 2536 CTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGAC CTACTGCTTGGCGTCCATGGCTTGTTCCAATGAGACCTTTGATGGGCTGGACTGT TGCCACCTGCAGCAGCTCAATTACTCTGGGGCCTGGATGCTCCCCTGTGTGAGGGCACC 2575 CTACTGCCTCCATGCCTTGGCTTCCTCCAATGAGACCTTTGATGGCAGAGTGC 2695 CTGGCACTGTATCTGCATGCACAAGAGGGGAATCGACTGCCCGCCTGGACTTCTGTGTGG CTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGGCCTAAACTTCCTCTGG CTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGC AAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGGTACAGGCATACAACCGGAGG CTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGC CTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAG AATGATGAACTCTACTATCAGTCGTGTGTGTGTGTGTGTTATGTTTGCCTCCATTGCC AACTICICIGAGIICIAIGIGGAGCIGGAGGAAAAAATGAGGGIGCCGAGIGCCIGCGG 1975 2056 2035 2116 2095 2176 2155 2236 2215 2296 2275 2356 2335 2476 2596 2716 3076 (2776 2836 2875 2755 2896 2956 2935 3016 2995 g g δ oy Oy Oy Qy Db δ Q δ QQ Qγ qq οy g οy Dp qq δ δy

1175

1235

602

1295

662

1115

482

1415

782

1475

1535

902

1595

1775

1835

1202

1955

2015

2075

```
CCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCACACATTGAGACTTTCCTCATCCT 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGGAGATGGGGGGTAGA 1355
 GTCTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA 362
                                                                                                                                                                                   CCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAA
                                                                                                                    GCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGT
                                                                                                                                                   TGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCG
                                                                                                                                                                                                                                                                                                     CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGGACTACGAAGTGGAGCCAGG
                                                                                                                                                                                                                                                                                                                                            CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATTGAGTTCCTGAGCCGTGCCATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGGTTTTTGCTCACCTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCATGAGAATCGGCAGCAGCAGCGGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT
                        GAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                               1143
                               363
                                               1056
                                                              423
                                                                             1116
                                                                                             483
                                                                                                           1176
                                                                                                                           543
                                                                                                                                            1236
                                                                                                                                                           603
                                                                                                                                                                          1296
                                                                                                                                                                                         663
                                                                                                                                                                                                         1356
                                                                                                                                                                                                                        723
                                                                                                                                                                                                                                        1416
                                                                                                                                                                                                                                                       783
                                                                                                                                                                                                                                                                     1476
                                                                                                                                                                                                                                                                                     843
                                                                                                                                                                                                                                                                                                    1536
                                                                                                                                                                                                                                                                                                                    903
                                                                                                                                                                                                                                                                                                                                    1596
                                                                                                                                                                                                                                                                                                                                                   963
                                                                                                                                                                                                                                                                                                                                                                  1656
                                                                                                                                                                                                                                                                                                                                                                                 1023
                                                                                                                                                                                                                                                                                                                                                                                                 1716
                                                                                                                                                                                                                                                                                                                                                                                                                1083
                                                                                                                                                                                                                                                                                                                                                                                                                                1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1383
303
               966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                           g
                                                          g
                                                                                          9
                                                                                                                      g
                                                                                                                                                      g
                                                                                                                                                                    ŏ
                                                                                                                                                                                     g
                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                               OD
                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
          δ
                                              ογ
                                                                         δy
                                                                                                      δ
                                                                                                                                          Óζ
                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                               17-DEC-2001
                                                                                                                                          CAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGA 3435
                                                                                                                    815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    995
                                                                                                                                                                                                                                                                                                                                                                                                         695
                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCT 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA 875
                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                             GTCTCAGCGCCAGGCCTTTCAGGAGACCGGCAGTTACATCCAGGCCCGGCTCCACGCTGCA
TTGGAGAAGATCAAGACCATCGGTAGCACCTACATGGCCGCCTCTGGGCTAAATGCCAGC
               ACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGGCTC
                                                                             CTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATC
                                                                                                           TAACGTGGTGCTGGCCATCCTGGCGCGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gao, M
                                                                                                                                                                                                                                PAT
                                                                                                                                                                                                                                                                                                                                                                                         .;
0
                                                                                                                                                                                                                                                                                                                                                                           Length 1812;
                                                                                                                                                                         GGGGTGGTCAAGGTGAAGGGCAAAGGGGGAGATGACCACCTACTTCCTCAA 3485
                                                                                                                                                                                and
                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                          1 (bases 1 to 1812)
Hammond, H. Kirk., Insel. P.A., Ping, P., Post, S.R. Gene therapy for congestive heart failure
Patent: US 6306830-A 3 23-ocr-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                         .
9
                                                                                                                                                                                                                                                                                                                                                                                         Ĥ
                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                       Score 1808.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                   405
                                                                                                                                                                                                                               1812 bp
US 6306830.
                                                                                                                                                                                                                                                                                                                                          /organism="unknown"
539 c 507 g
                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                      GI:17914792
                                                                                                                                                                                                                                       patent
                                                                                                                                                                                                                                                                                                                                                                       51.0%;
ilarity 99.9%;
Conservative
                                                                                                                                                                                                                                                                                                                                    .1812
                                                                                                                                                                                                                             AR174472
Sequence 3 from p
AR174472
AR174472.1 GI:17
                                                                                                                                                                                                                                                                                    Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                   ø
                                                                                                                                                                                                                                                                     Unknown
                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                             Unknown
                                                                                                                                                                                                                                                                                                                                                                                       Matches 1809;
                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                              RESULT 15
AR174472
LOCUS
DEFINITION
                                                                                                                                                                                                                                             ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                  COUNT
               3136
                                                            3175
                              3115
                                              3196
                                                                             3256
                                                                                            3235
                                                                                                           3316
                                                                                                                         3295
                                                                                                                                          3376
                                                                                                                                                         3355
                                                                                                                                                                         3436
                                                                                                                                                                                        3415
                                                                                                                                                                                                                                                                                                                                                                                                        636
                                                                                                                                                                                                                                                                                                                                                                                                                        m
                                                                                                                                                                                                                                                                                                                                                                                                                                       969
                                                                                                                                                                                                                                                                                                                                                                                                                                                      63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    876
                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   936
                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                  BASE
g
              δy
                            qq
                                            Q
D
                                                                          ò
                                                                                       D
                                                                                                                       g
                                                                                                                                                     Db
                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                        ò
                                                                                                                                        ŏ
                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
```

```
2315
                                                                                               2435
                                               1623 GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGAGCTGTGC 1682
                                                                                                                              TTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTCC
                                                                         GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC
                                                                                                                                                                             Search completed: March 1, 2003, 02:24:38
Job time: 6121.65 secs
                                                                                                                                                TGAGGTGTCC 2445
                                                                                                                                                       2256
                                                                                                                       2376
                                                                                                                                    1743
                                                                                                                                                2436
                                                                                                                                                            1803
          QQ
                                qq
                                               0y
0y
                                                                                qq
                                                                                              Q.Y
Db
                                                                                                                    δ
                                                                                                                                  QQ
                       δ
                                                                                                                                               δ
ò
```

Type V adenylyl cy Human adenylyl and Adenylyl cyclase t DNA encoding rena Human adenylyl and

Human type V adeny

Cardiac adenylyl Cardiac adenylyl

AAX00462 AAQ95540 AAQ37543 AAA53922

AAD28058 AAA53918 AAS30177 AAD28061

AAS30223 AAS27146 AAS02694 AAD31191 AAD06820 AAD31190

DNA encoding rena CDNA encoding nove Human adenylate cy Human adenylate cy Human adenylate cy Type VII adenylyl and Rat adenylyl cycla Adenylyl cycla Adenylyl cycla Adenylyl cycla adenylyl cycla Adenylyl cycla adenylyl and Rat adenylyl cycla Adenylyl cycla adenylyl Type III adenylyl Type VII adenylyl Type VII adenylyl Type VI adenylyl Type IV adenylyl Type IV adenylyl Type IV adenylyl Type IV adenylyl Cycla Adenyl Cycla Adenyl Cycla Adenylyl Cycla Adenyl Cycl

AAA53925 AAD28057 AAA14929057 AAB107501 ABN09298 AAA53920 AAA53924 AAD34078 AAC99124 AAA53975 AAA53926

Human pancreatic c Adenylyl cyclase C Human cDNA sequenc Drosophila melanog

ABL15355 AAF33100 AAD08561

```
1703.4
1690
11689.4
1688.4
843.5
843.6
843.6
843.6
843.6
843.6
843.8
843.8
843.8
843.8
843.8
843.8
843.8
843.8
843.8
843.6
844.2
844.6
845.2
845.2
845.2
845.2
845.2
845.2
845.2
845.2
845.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846.2
846
    February 28, 2003, 19:58:51; Search time 509.055 Seconds (without alignments) 15700.357 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A. Calibs2/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA1992.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*

SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001B.DAT:*
                                                                                                                                                                                                                                                 US-09-750-240-5
3549
1 atgtcatggtttagtggcct.....aagggaccaaggtgggcact
                          GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                   2185239 seqs, 1125999159 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                   - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                               IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N_Geneseq_101002:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sed
                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                   OM nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum I
Maximum I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                               ö
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	Human cardiac aden	Human cardiac aden	Human type VI aden	Human modified car	Cardiac adenylyl c	Mouse ischaemic co	Type VI adenylyl c	Human partial card	Human adenylylcycl
SUMMARIES		AAD08567	AAX00461	AAD08568	AAQ42525	AB199680	AAA53923	AAD08562	AAV23246
DB	22	22	20	22	14	24	21	22	19
% Query Match Length DB	3549	3552	4942	3582	4046	5841	4131	1812	2127
% Query Match	100.0	98.2	98.0	95.2	84.4	77.9	77.5	51.0	51.0
Score	3549	3484.8	3478.4	3379.2	2996.8	2765	2751.2	1808.4	1808.4
Result No.	1	2	6	4	Ŋ	9	7	œ	σ

AAF13100 AAF31100 AAF31100 AAF31100 AAF31100 Human secreted pro Human partial card Human adenylyl cyc AAF16533 Human secreted pro ABL07755 Human secreted pro Drosophila melanog ABL29627 ALIGNMENTS ALIGNMENTS	BP.	04-SEP-2001 (first entry) Human cardiac adenylcyclase VI (ACVI) isoform #1 DNA.	<pre>Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylyLcyclase; adenylate cyclase; cAMP synthetase; G-protein receptor kinase; GRK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ds. Homo sapiens.</pre>	<pre>hualifiers "Human cardiac adenylcyclase VI isoform #1" " 4.6.1.1"</pre>				
10.2 10.2 10.2 10.3	lard; DNA; 3549	(first entry) adenylcyclase	iant; beta-adren gene therapy; b lase; adenylate eceptor kinase; nylcyclase VI; A	Location/Qualifiers 13504 /*tag= a /product= "Human ca /EC_number= "4.6.1.	_:		2000WO-US35411	99US-0472667.
339 343.8 10 40 295.2 8 41 284.4 8 42 284.4 8 43 277 7 45 267.6 7	1 53 AD08563 stan AD08563;	04-SEP-2001 (Human cardiac	Human; cardian myocardium; ge adenylylcyclas G-protein rece cardiac adenyl Homo sapiens.	Key CDS	WO200148164-A2	05-JUL-2001.	26-DEC-2000; 2	27-DEC-1999;
	RESULT AADO856 ID AZ XX AZ AC AZ	ZX EX	KW KW KW KW KW KW	HELLE	N A	623	PF XX	XX XX

us-09-750-240-5.rng

~

(REGC) UNIV CALIFORNIA

```
enhancing
                                                                                                                                                                                                                                                                      The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylytcyclases (also referred as adenylocyclase, receptors (per AR), adenylytcyclases) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present DNA sequence encodes human cardiac adenylcyclase VI (AVVI) isofform which is used for generating a third beta-ASP transgene, used in the exemplification
                                                                                                                                              Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure
                                                                                                                                                                                                                                       English
                                                                                                                                                                                                                                  Example 5; Page 122-129; 153pp;
                                          Ξ
                                                                                  WPI; 2001-418260/44
                                            Gao
                                                                                                        P-PSDB; AAE04310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the invention.
                                          HK,
                                            Hammond
```

Sequence 3549 BP; 699 A; 1025 C; 1061 G; 764 T; 0 other;

ö 120 180 180 240 240 300 300 360 360 420 420 480 480 540 900 009 Gaps 9 9 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCACCCCTGCGGGCCCC CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGAATGAACGGAAAAACACCCTGGGGT GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG GAGCTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG GGCGGGACGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC CAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGTGCTGGTG CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCACCCCTGCGGGGCCCC GTGGCACTGTTGGCCTGTGCCGCCCTGTTCGTGGGGGCTCATGGTGGTGTGTAACCGG DB 22; Length 3549; Indels ö Score 3549; 1; Pred. No. 0; 0; Mismatches 100.0%; ilarity 100.0%; Conservative 0; Query Match Best Local Similarity Matches 3549; Conserv 61 61 121 121 181 181 241 241 301 301 361 361 421 481 481 541 541 421 g g ò ò a g Q ò g g ద g ò ò ò δ ò à à

```
1080
                                                                                                                                                                                 1020
                                                                                                                                                                                                                            1080
                                                                                                                                                                                                                                                                                      1200
                                                                                                                                                                                                                                                                                                      1260
                                                          780
                                                                        780
                                                                                        840
                                                                                                       840
                                                                                                                      900
                                                                                                                                     900
                                                                                                                                                    960
                                                                                                                                                                  960
             999
                                                                                                                                                                                GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                           GAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATG
CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                      GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC
                                                                                                                                                     GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG
                                                                                                                                                                                                              CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA
                                                                                                                                                                                                                                            AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTG
                                                                                                                                                                                                                                                                         TTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTC
                                                                                                                                                                                                                                                                                                      GCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCAACCACATGGAAGCAGGAAGCCGGCTGGCCGCATCCACATCACTCGGGCAACACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCCCTGTGTTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC
                                                                                        GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                 GACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTGGTA
                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                           1081
                                                                                                                                                                                                                                                          1081
                                                                                                                                                                                                                                                                         1141
                                                                                                                                                                                                                                                                                      1141
                                                                        721
                                                                                                       781
                                                                                                                                                                                                961
                                                                                                                                                                                                               1021
                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                    1261
                                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                                                                                                                                                                                                                                                             1441
                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1621
             601
                            661
                                           661
                                                          721
                                                                                        781
                                                                                                                      841
                                                                                                                                     841
                                                                                                                                                    901
                                                                                                                                                                  901
                                                                                                                                                                                 196
                                                                                                                                                                                                                                                                                                                                                  1261
                                                                                                                                                                                                                                                                                                                                                                 1321
                                                                                                                                                                                                                                                                                                                                                                                               1381
                                                                                                                                                                                                                                                                                                                                                                                                              1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1681
           g
                            õ
                                          QQ
                                                          οy
                                                                      g
                                                                                       δ
                                                                                                      g
                                                                                                                     δ
                                                                                                                                   g
                                                                                                                                                   à
                                                                                                                                                                g
                                                                                                                                                                                οχ
                                                                                                                                                                                             g
                                                                                                                                                                                                              οy
                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

1581 GARAMAGONICTOGOCAMECTECACGOGOCAMACTACOGOCAMACTACOGOCAMACTACOCAMACT	Db 2761 CTAAACTTCCTCTGGAAACTACAGGCAACAG	2821	2881	2941	Qy 3001 GCCGAGTGCCTGCGGCTGCTCAACGAGATCP 	Qy 3061 GAGCGGTTCCGGCAGCTGGAAAGATCAAGF 	Qy 3121 GGGCTGAACGCCACCACCTACGATCAGGTGC 	3181	3241	3301	3361	3421	3481 CTCAATGGGGGCC 	Oy 3541 GTGGGCACT 3549 Db 3541 GTGGCCACT 3549	RESULT 2 AAD08567 ID AAD08567 standard; DNA; 3552 BP.	XX AC AAD08567; XX DT 04-SEP-2001 (first entry)		KW MYGOZATOLUM; gene Lindrapy; beta-adren KW adenylylcyclase; adenylate cyclase; KW G-protein receptor kinase; GRK; hear KW cardiac adenylcyclase VI; ACVI isof	AA OS Homo sapiens. XX
5 6 5 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1681 GAGAAAGGCATGCTGGCCAACTIGCAGCTCGGGCCAACTCCATGGAAGGCTCATG 174	1741 CCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAG	1801 ATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAG 	1861 GATGAGGTGGATGAGTTCCTGAGCCGTGCCATGCATGCCCGCAGCATTGATCAGCTGCGG	1921 AAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGAG	1981 TCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTTGGTCTTCTGC	2041 ITCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCTGATGCTTGGGATTTAT	2101 GCCAGCATCTTCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGT	2161 TCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACAT 2220	2221 AGCACCGCAGTTGGCATCTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATG	2281 ITCACCTGTAACCACCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCT 2	2341 GCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCC	2401 CTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTG	2461 CTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCACGGGAAGTTGGCCATG 2 	2521 ATCTTTGTCTTGGGCCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATC 2	2581 TTTGACAACTATGACCTACTGGCGTCCATGGCTTGGCTT	2641 GATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTTTTTTT	2701 CTGCTGGTGTTTGCGCTGGTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGC 27 	2761 CTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGGGATGGAGGGGGCTACAG
	п	5 1	о п	J 1	5 1	5 1	5 0	5 1	. u	J 1	5 1	5 1	J 11	5 1	, i	> 1	> 1	J 1	J

ignalling protein; beta-ASP; energic receptor; beta-AR; ; cAMP synthetase; art disease; congestive heart failure; form; beta-ASP transgene; ds. TCTGCCCAAGGACGTGGCGGCCCACTTCCTG 2880 2940 3000 GACGATTGGTAGCACCTACATGGCTGCCTCA 3120 GCACATCAATGAGCACTCCTTCAACAATTC 3240 AGTCGTGGCAGGTGTCATCGGGGCTCGGAAG 3300 CCTGTACCAGGTTCTAGCTGCCAAGGGCTAC 3420 GAAGGCCAAGGGGGAGATGACCACCTACTTC 3480 CCCAGCCACAAATTCAGCTGAAGGGACCAAG 3540 GAATGTCTCTAGTCGTATGGACAGCACGGGG 3360 GAAGGCCAAGGGGGAGATGACCACCTACTTC 3480 AGGGGAAAAAGAGGAGATGGAGGAGCTACAG 2820 CTATGTGGAGCTGGAGGCAAACAATGAGGGT 3000 CTATCAGTCGTGTGAGTGTGTGCGCTGTTATG CTATGTGGAGCTGAGGCAAACAATGAGGGT VI) isoform #2 DNA.

```
481
                                                                                                                                               601
                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                     1021
                                                                                                                                                                                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                                                         1081
                   421
                                    421
                                                                                          541
                                                                                                                             601
                                                                                                                                                                 199
                                                                                                                                                                                  661
                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                                   196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1261
                                                      481
                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1438
                  δ
                                Q
                                                      οy
                                                                   q
                                                                                       οy
                                                                                                       g
                                                                                                                            Qγ
                                                                                                                                         qq
                                                                                                                                                                Óγ
                                                                                                                                                                            g
                                                                                                                                                                                             οy
                                                                                                                                                                                                                  Ωp
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                     O.Y
Db
                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                          ΩD
                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                ;
                                                                                                                                                                                                                                                enhancing
                                                                                                                                                                                                                                          The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inscrting transgenes encoding beta-adrenergic signalling proteins (beta-ASP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclases, edenylate cyclases and cAMP synthetase) and G-protein receptor kinase (GRX) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present DNA sequence encodes human cardiac adenylcyclase VI (ACVI) isoform which is used for generating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAACGCAATGGGCAGAAGCGTTCGCGGCGCGGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                         polynucleotide encoding a modified adenylylcyclase polypeptide. for enhancing cardiac function in mammalian hearts, and for .ng heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGCTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCGGGACGGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                               .;
;
                                                                                                                                                                                                                                                                                                                                                                                             Length
                           ۲
                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                              a fourth beta-ASP transgene, used in the exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                         Sequence 3552 BP; 686 A; 1037 C; 1068 G; 761 T; 0 other;
                         "Human cardiac adenylcyclase
                                                                                                                                                                                                                                                                                                                                                                                                              32;
                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                           Score 3484.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 0;
); Mismatches
                                                                                                                                                                                                                             6; Page 134-140; 153pp; English.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                             .
0
                                    /EC_number=
                                                                                                                                                                                                                                                                                                                                                                                           98.2%;
                                                                                        26-DEC-2000; 2000WO-US35411
                 /product= '
                                                                                                          99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                    Best_Local Similarity 99.0
Matches 3517; Conservative
                                                                                                                           (REGC ) UNIV CALIFORNIA
                                                                                                                                                             WPI; 2001-418260/44
P-PSDB; AAE04311.
                                                    WO200148164-A2
                                                                                                          27-DEC-1999;
                                                                                                                                             HK,
                                                                                                                                                                                                           treating
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                             Hammond
                                                                                                                                                                                         Novel puseful
                                                                                                                                                                                                                             Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
Key
à
                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

```
1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                480
                                                                        540
                                                                                               540
                                                                                                                       900
                                                                                                                                             900
                                                                                                                                                                      999
                                                                                                                                                                                             999
                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                   780
                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                    840
                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                                                                                                                                                 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTCTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                      541 GTGGCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGGCTCATGGTGGTGTAACCGG
                                                                                                                                                                                   GCAGTGCAGGTCGGGGGCGCTTTCGCAGCACCCGCGCAGCCCCTCTGCGGGCCTTTGG
                                                                                                                                                                                                                                  TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                                                                                 GTCCTCAGCGCCTGGGCCTCCTCCACTTTGATCTTGGCCTGGCCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                  GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC
                                                                                                                                                                                                                                                                                                                                                                                          841 GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                  GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGAAGAAGACATCAACACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAAAGAAGAC---AIGTICCACAAGAICTACATACAGAAGCAIGACAAIGTCAGCAIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACACGCGGGCGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGCGGTACTTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTG
                                                                        CATAGCTTCCGCCAGGACTCCATGTGGGTGAGTAACGTGGTGCTGGGCGATCCTGGCG
```

Ŋ

GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA
7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

2640 2697 2700 2757 2760 2817 2820 2877 2880 2937 2940 2997 3000 3057 3060 3117 3120 3177 3180 3237 3240 3297 3300 3357 3417 3420 3480 3537 3540 CAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTAC 3477 ITTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC 2637 GAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC GATGGCCTGGACTGTCCAGCTGCAGGAGGTGGCCCTCAAATATATGACCCCTGTG GCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC GAGCGGTTCCGGCAGCTGGAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC **TACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT** CCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG GTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC GATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG PTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG GGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT GGGCTGAACGCCACCACCTACGATCAGGTGGCCGCTCCCACATCACTGCCCTGGCT

Db 3541 AAGGTGGCACT 3552
RESULT 3
AAX00461
LD AAX00461 standard; cDNA; 4942 BP

444

GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG

9

```
265 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCACCCTGCGGGCCCC
                                                             325
                                                                                                                        385
                                 181
                                                                                                                      g
                                                                                                                                                                                  g
                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                 ŏ
                                                            g
                                                                                             ŏ
                                                                                                                                                      ò
                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This DNA sequence encodes human type VI adenylyl cyclase (hAC6, see AAW30599) that is expressed mainly in the heart and brain. hAc6 has a similar putative structure to other adenylyl cyclase isoforms to a similar putative structure to other adenylyl cyclase isoforms but, like type V, is distinguishable in that it has a larger N-terminus and a relatively shorter C-terminus as it lacks the C2b region. hAc6 cDNA was initially isolated from a human heart cDNA library using an adenylyl cyclase PCR fragment as probe. It was used to design primers that were used in a PCR-based RACE to obtain the full-length cDNA sequence. The invention relates to the hAC6 cape, methods for the recombinant production of purified hAc6 and the proteins made by these methods, antibodies against hAC6, vectors, probes and host cells (especially HEK-293) transformed by dense encoding polypeptides having hAC6 activity, along with diagnostic and therapeutic uses for these various reagents. hAC6 can be used as a tool to screen for agonists and antagonists that stimulate/inhibit hAC6. Such compounds have therapeutic utility
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Newly isolated and purified human type VI adenylyl cyclase (hAC6) bolypeptide - useful for identifying potential therapeutic agents that modulate hAC6 activity, and for the diagnosis of hAC6-associated diseases and disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            can be used as a tool to screen for agonists and antagonists that stimulate/inhibit hAC6. Such compounds have therapeutic utility in freating diseases caused by aberrant activity of this enzyme, and diseases whose symptoms can be ameliorated by stimulating or inhibiting the activity of hAC6.
                                                                                             gs,
                                                                                          Adenylyl cyclase type VI; human; hAC6; therapy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4942 BP; 953 A; 1404 C; 1512 G; 1073 T; 0 other;
                                                            Human type VI adenylyl cyclase cDNA
                                                                                                                                                      Location/Qualifiers
145..3651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 3; Fig 1A-I; 42pp; English.
                                                                                                                                                                                                                                                                                                                                                    THERAPEUTICS INC
                                                                                                                                                                                                                                                                                                         97US-0886550
                                                                                                                                                                                                                                                                                                                         97US-0070904
                                                                                                                                                                                                                                                                           98WO-US13694
                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-106049/09.
P-PSDB; AAW30599.
                                                                                                                                                                                                                                                                                                                                                                                   Tomlinson JA;
                                                                                                                        Homo sapiens
                                                                                                                                                                                                                WO9901547-A1
                                                                                                                                                                                                                                                                           01-JUL-1998;
                                                                                                                                                                                                                                                                                                         01-JUL-1997;
                                                                                                                                                                                                                                                                                                                       01-JUL-1997;
                              21-MAY-1999
                                                                                                                                                                                                                                                                                                                                                     (CORT-) COR
                                                                                                                                                                                                                                             14-JAN-1999
 AAX00461
```

```
1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAAGAGAC---ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 1137
|||||||||||||||
AAAAAAGAAGACATGATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1285 CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG 1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                  420
                                                                          564
                                                                                                  480
                                                                                                                                                    540
                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                       99
                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                     984
                                                                                                                                                                                                                                                                                                                                                                                                                                                             900
                         504
                                                                                                                           624
                                                                                                                                                                                                                              744
                                                                                                                                                                                                                                                                                                                                864
                                                                                                                                                                                                                                                                                804
                                                                                                                                                                                                     CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCCTGTAC
                                                                CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                     GTCCTCAGCGCCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                          GTCCTCAGCGGCCTGGGCCTCTCCACCTTGATTGATCTTGGCCTGGCAACTTAAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG
 GGCGGGACGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                    CAGCGGTACTTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTG
                                                                                                                                                     CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGCTACGTGGTGCTGGGCCATCCTGGCG
                                                                                                                                                                                                                                                                                                          GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGACCCGCGCAGCCCCTCTGCGGGCCTCTGG
                                                                                                                                                                                                                                                                                                                                                            TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                              685
                                                                                                                                                                                                                                                                                745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1045
                         445
                                                                           505
                                                                                                    121
                                                                                                                                                    481
                                                                                                                                                                             525
                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                 805
                                                                                                                                                                                                                                                                                                                                                                                    865
                                                                                                                                                                                                                                                                                                                                                                                                                                     925
                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1225
                                                                                                                            265
                                                                                                                                                                                                                                                       501
                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1138
301
                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCCCTATATATGAGCTCCCTCCGGGATGCAGAGCCACCCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACGCAATGGGCAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 4942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 3478.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98.08;
98.98;
```

Best Local Similarity 98.9 Matches 3513; Conservative

145 61 202 121

ð 셤 δ g ò

Query Match

0y 1339 CTGGGGGATCCATCAGCGGGGATCCCGGAGCCCCCG 1414 0y 1405 CTGGGGATCCATCAGCGGGGACCCCCGGAGCCCCCC	/ 2338 CCTGCTGACATCACTG	/ 2398 CCCTGTGTGAGGGCA	/ 2458 CTGCTGAGTCTCTTGG	2518	2578	2638	2698	/ 2758 CGCCTAAACTTCCTCTCTCTCTCTCTCTCTCTCTCTCTCT	2818	3025	/ 2938 ATGTTTGCCTCCATTG	3145	3058	3118	3178 GACTACGCCATGCGGCCCT 3325 GACTACGCCATGCGGCC	3238 TTCCAGATGAAGATTG	3298	3358	7 3418 TACCAGCTGGAGTGTC
1258 CTGGGGATCAGGATCAGGGGGCTGTACTACTGTGTGTGCGGGGCGCCGGGAGGCCCGG 1310 GTGGGGATCAGGATCAGGGGGATGGATACTGTGTGTGCGGGCTGCGCGCGGGGCCCGG 1311 GTGGGGGCTCCACTCCTGTGGGGATGGGGTTAGACATGTGTGCGGGCTGCGCCCCTCCCT	Q Q	Qy Dp	do Db	Oy Dp	Qy Dp	da da	දු පු	Qy Dp	QQ Dp	Oy GD	QV Db	QQ Dp	Qy Db	Qy Db	QQ Dp	qa a	QY Db	Qy Dp	ΛO
6 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4	1258 CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTG	1318 GCCGACCATGCCACTGTGTGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG 1	1378 GTACGTGAGGTGAAAGTGAACATGCGGGGGGGGGGGGGG	1438 CACTGGGGCGTCCTTGCGAAATGGCAGTTCGATGTGTCGATGTCGATGTGGCC 1 111111111111111111111111111111	1498 CTGGCCAACCACGGAGCAGGAAGCCGGGCTGGCCGCATCACACATCACTCGGGCAACA 15	1558 CTGCAGTACCTGAACGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGGG 161	1618 TACCTCAAGGAGCAGCACATTGÄGACTTTCCTCATCCTGGGCGCCAGCCAGAAACGGAAA	1678 GAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG 17	1738 ATGCCGCGATGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC 17	1798 CAGATGGGCATTGATGATTCCAGCAAAGACAACGGGGGCACCCAAGATGCCCTGAACCCT	1858 GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG	1918 CGGAAGCATCTGCGCGCGCTTTTTGCTCACCTTCCAGAGATTTTGAGAAGAATTTTTTTT	1978 TACTCCGGAAGGTGGATCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTTGGTCTTC	2038 IGCTICATCTGCTTCAFCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT	2098 TATGCCAGCATCTTCCTGCTGCTAATCACCGTGCTGATCTGTGTGTG	2158 GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCAACGTCTGTCCCGCTCACGGGCAACGTCTGTTCTCTGTTCCCTCACGGGCACGCAC	2218 CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAAC	2278 ATGTTCACCTGTAACCACACCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA 23 11	
	5 11	U A		0 0	. п	O D	υп	G A	, д	O A	υ a	σа	0 0	υ Δ	0 0	υд	OΑ	σΩ	

3418 TACCAGCTGGAGTGTCGAGGGTGTCAAGGTGAAGGCAAGGGGGAGATGACCACCTAC 3477 CGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGCGCTGTT ATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG AGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCCACTTC CGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC CTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT GCCTGCCACCTGCAGCAGCTCAATTACTCTGGGGCCTGGATGCT ACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG GCCAGCTCTGTTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC TGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG GCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC TGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTA CAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC AGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT CTCATGGAGCAGATGAGCACATCAATGAGCACTCCTTCAACAAT GGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG ATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC δ œ

'n

Length 3582;

DB 22;

Query Match

```
myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylyloyclase; adenylylate.cyclase; cAMP synthetase; GAP copertor kinase; GRK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-AsP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-AsPs of the invention include beta-adrenergic receptors (beta-AR), adenylylcyclases (also referred as adenylcyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian hearts and for treating heart disease, especially congestive heart failure. The present consequence encodes human modified cardiac adenylcyclase VI (ACVI) isoform which is used for generating a beta-ASP transgene, used in the exemplification of the
Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                             TTCCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGCCACAAATTCAGCTGAAGGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cardiac ACVI isoform"
                                                                                                                                                                                                                                                                                                                                        cardiant; beta-adrenergic signalling protein; beta-ASP;
                                                                                                                                                                                                                                                                                                       Human modified cardiac adenylcyclase VI (ACVI) isoform cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Human modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 4; Page 143-150; 153pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
22..3525
                                                                                                                                                                                                                 BP.
                                                                                                                                                                                                                AAD08568 standard; cDNA; 3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-DEC-2000; 2000WO-US35411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0472667
                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                         AAGGTGGGCACT 3549
                                                                                                                         2001-418260/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P-PSDB; AAE04312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200148164-A2
                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-DEC-1999;
                                                                                                                                                                                                                                                                          04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hammond HK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          invention
               3565
                                             3478
                                                                          3625
                                                                                                        3538
                                                                                                                                    3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
                                                                                                                                                                                             AAD08568
                                                                                                                                                                                                                              g
                                             ö
                                                                        셤
                                                                                                      ò
```

G; 776 T; 0 other;

703 A; 1036 C; 1067

BP;

Sequence 3582

```
1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1021 CTGCTGCTGTCGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA 1080
                                                                                                          180
                                                                                                                                              240
                                                                                                                                                                                 300
                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       960
                                                                                                                           201
                                                                                                                                                               261
                                                                                                                                                                                                  321
                                                                                                                                                                                                                                       381
                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                           441
                                                                                                                                                                                                                                                                                                              501
                                                                                                                                                                                                                                                                                                                                                  561
                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                    621
                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                       681
                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                           741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        981
                                                                       GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                   Gaps
                                   9
                                                    81
                                                                                                                                            CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                   ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCCGCGCGCTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG
                                    1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                       GGCGGGACGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                GTGGCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGGCTCATGGTGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                     CATACCTTCCGCCAGGACTCCATGTGGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                       CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTTACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCCTCAGCGCCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGCGACGCTGAGGTGGCCCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                          CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCGCTGTAC
                                                                                                                                                                                                                                                                                             CAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGTGGTGGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGACCCGCGCAGCCCCTCTGCGGGCCTCTGG
                                                                                                                                                                                                                               ;
9
                  88;
Score 3379.2;
                  Mismatches
         Pred. No.
                   ö
95.2%;
97.4%;
                  Conservative
         Similarity
         Best Local Sin
Matches 3458;
                                                     22
                                                                                                                            142
                                                                                                                                                                                                                                       322
                                                                                                                                                                                                                                                                           382
                                                                                                                                                                                                                                                                                                              442
                                                                                                                                                                                                                                                                                                                                                  502
                                                                                                                                                                                                                                                                                                                                                                                    562
                                                                                                                                                                                                                                                                                                                                                                                                                       622
                                                                                                                                                                                                                                                                                                                                                                                                                                                           682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     862
                                                                      19
                                                                                        82
                                                                                                          121
                                                                                                                                              181
                                                                                                                                                                202
                                                                                                                                                                                   241
                                                                                                                                                                                                   262
                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           196
                                    ð
                                                    ద
                                                                      δ
                                                                                        g
                                                                                                          ò
                                                                                                                          q
                                                                                                                                             ò
                                                                                                                                                              qq
                                                                                                                                                                                  ŏ
                                                                                                                                                                                                 qq
                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                        op
                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                        òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
```

GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCAACGTTGTTCTCTGTTCTCTAAGGCCCTCACGGGCAACGTCTGTCCCGCAGCATTGTCCGTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGTCACGGGCAA 2659 TITGARGGGTGGACTGTCCAGCTGCAGGGAGGTGGCCCTCAAATATATGACCCTGTG TATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTACTCCTGT ATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA CCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC TTTGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG ATTCTGCTGGTGTTTGCGCTGTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC GGTGCCGAGTGCCTGCGCTCCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT GACTACGCCATGCGGCTCATGGAGCAGGTGAAGCACATCAATGAGCACTCCTTCAACAAT a Q 00 00 00 g οy g Q Db oy du Qy Db Qy Db ٥y g Øγ g QY Db Ω QQ QQ δ QΛ g QΥ δ g Ω ò

4;

```
Matches 3233;
                                                                        Query Match
Best Local
                                                                                                                                                        191
                                                                                                                                                                       121
                                                                                                                                                                                        248
                                                                                                                                                                                                        181
                                                                                                                                                                                                                        308
                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                       368
                                                                                                                                                                                                                                                                                                                       485
                                                                                                                                                                                                                                                                                                                                                       545
                                                                                                                                                                                                                                                                                                                                                                                      605
                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       965
                                                                                                                                       61
                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                      425
                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                      999
                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                       725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
8
                                                                                                                      g
                                                                                                                                       ò
                                                                                                                                                      qq
                                                                                                                                                                       δ
                                                                                                                                                                                     qq
                                                                                                                                                                                                       δ
                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                      3378
                                                                        3417
                                                                                                                       3498
       3297
                                                                                                        3477
                                                                                                                                                        3558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A canine heart cDNA library was constructed in lambda gt10 and was screened with a 970 bp Aatl-HincII fragment from type I adenylyl cyclase cDNA probe (encodes the first cytoplasmic domain of adenylyl cyclase, which has significant homology to other previously known types of adenylyl cyclase). One positive clone, of 5.4 kb was obtd. Positive colonies were subcloned into pUC18 and further subcloned and sequenced bidirectionally. The 5.4 kb clone was used to rescreen the library and on averlapping clone contg. the 5' end of the gene was isolated. Together the two clones cover the complete
     3319 AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                               AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                     GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                      TACCAGCTGGAGTGTCGAGGGTGGTCAAGGTGAAGGGCGAAGGGGGAGATGACCTAC
                                                                                                                                      TTCCTCAATGGGGCCCCCAGCAGTTAACAGGGCCCAGCACAAATTCAGCTGAAGGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        screen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ಭ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        - useful
                                                                                                                                                                                                                                                                                                SS.
                                                                                                                                                                                                                                                                                               failure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NNA encoding cardiac adenylyl cyclase - which stimulate activity of the cyclase
                                                                                                                                                                                                                                                                                               heart
                                                                                                                                                                                                                                                                                               heart;
                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
131..3627
/*tag= a
                                                                                                                                                                                                                                                                                              function;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Fig 2; 34pp; English.
                                                                                                                                                                                                                                                                             Cardiac adenylyl cyclase gene
                                                                                                                                                                                                                              AAQ42525 standard; DNA; 4046
                                                                                                                                                                                                                                                                                                                                                                                                                             (AMCY ) AMERICAN CYANAMID CO
                                                                                                                                                                                                                                                                                                                                                                                                             91US-0793961.
                                                                                                                                                                                                                                                                                                                                                                                             92EP-0117374
                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                      AAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1993-168873/21.
P-PSDB; AAR37309.
                                                                                                                                                                                                                                                                                               cardiac
                                                                                                                                                                                AAGGTGGGCACT
                                                                                                                                                                                                                                                                                                             Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                             18-NOV-1991;
                                                                                                                                                                                                                                                                                                                                                                                            12-OCT-1992;
                                                                                                                                                                                                                                                              14-SEP-1993
                                                                                                                                                                                                                                                                                              Regulation;
                                                                                                                                                                                                                                                                                                                                                                            26-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ishikawa Y;
                                                                                                                                                                                                                                                                                                                                                             EP543137-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for cpds.
                                                                                                                                                                                                                                              AAQ42525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Purified
                                     3298
                                                                     3358
                                                                                     3379
                                                                                                      3418
                                                                                                                                      3478
                                                                                                                                                     3499
                                                                                                                                                                     3538
                                                                                                                                                                                      3559
                                                                                                                                                                                                             RESULT 5
                                                                                                                                                                                                                                                                                                                              Key
                                                                                                                                                                                                                                      셤
                                                                                                                                                    g
                                                                                                                                                                                     g
                                                   QQ
                                                                     õ
                                                                                     g
                                                                                                                    g
                                                                                                                                                                     ŏ
      à
                                    à
                                                                                                    à
                                                                                                                                     ò
```

```
canine cardiac adenylyl cyclase gene. The gene is suspected of being involved in the regulation of cardiac function and it is thought that decreased activity of adenylyl cyclase in the heart may be a major factor in the development of heart failure. Thus the adenylyl cyclase gene is useful to screen cpds. which stimulate the activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                     307
                                                                                                                                                                                                                                                                                                                                                                                                                                                         367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           904
                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                     GAACGCAATGGGCAGAAGCGTTCGCGGCGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                       CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                        CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGCCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGCGGTACTTTTTCCAGATGAACCAGAGCCAGCCTGACGCTGCTGGTGGCGGTGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGCACTGTTGGCCTGTGCCGCCGCCCTGTTCGTGGGGGCTCATGGTGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGCCCGCGCAGCCCCTCTGGGGGCCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCCTCAGCGGCCTGGGCCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCAAC
                                                                                                                                                                                                                       ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCGGGACGCCTGAGGTGGCGCCCCGACGCGGTGCCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCCCTGTGTTTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                     Length 4046;
                                                                                                                                                                                      12;
                                                                                                                                                                                    307; Indels
                                                                                                                    Sequence 4046 BP; 743 A; 1206 C; 1254 G; 843 T; 0 other;
                                                                                                                                                     DB 14;
                                                                                                                                                 Score 2996.8;
Pred. No. 0;
                                                                                                                                                                                    0; Mismatches
                                                                                                                                                     84.4%;
91.0%;
                                                                                                                                                                                      Conservative
                                                                                                                                                                    Similarity
                                                                                     the cyclase
```

	2158 GGTTCTCT 2282 GGCTCTCT 2218 CATAGCAC 2342 CACAGCAC	2278 ATGTTCAC 2402 ATGTTCAC 2338 CCTGCTGA 1 2462 CCGCTGTG 2398 CCCCTGTG	2458 CTGCTGAG 2582 CTGCTGAG 2518 ATGATCTT 2642 2642 ATGTTGAT 2578 ATGTTTGAT 2703 ATGTTTGAT	2638 TTTGATGG 2762 TTTGATGG 2698 ATTCTGCT 1111111 2822 ATTCTGCT 2758 GGCTAAA 1 1 2882 GGTCTGGA	2818 CAGGCATA 2942 CAGGCCTA 2878 CTGGCCCG 3002 CTGGCCCG 2938 ATGTTTGC 111111 3062 ATGTTTGC 2998 GGTGCCGA 2998 GGTGCCGA 3122 GGTGCGA 3128 GAGGAGCG
0 O O O O O O O O O O O O O O O O O O O	do do do		64 65 65 65 65 65 65 65 65 65 65 65 65 65	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 6 6 6 6 6 6 6 6 6
	ACA 1204 AC 1137 AC 1264 AC 1264 AC 1197 AC 1324	GC 1257 	a a a a a		TG 1861 1 1 1 1 1 1 1 1 1 1
TTTCAGG TTTCAGG SCAGGAGC 	ratcaaca rgtcagca rgtcagca scaggagc	344TCACT	2666666 	CGGGCCA CGGGAACG SGGAACGA SAAACGA SAAACGA SGAAGGC	SGAAGGCC SGCCTTCC SGCTTTCC CTGAACC CGATCAC GATCAC GATCAC GATCAC GAAAAGA
GCCAGGC 	AAGAAGA ATGACAA! ATGACAA! GCACTGC(GCACCGC(CTGCGGA 	TCCACAGGGGTCCACAGGGGTCCACAGGGTCCACAGGGTCCACAGGGTCCACAGGTCCACAGGGTCCACAGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGGGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCACAGAGTCAAGAGTCACAGAGTCAAGAGTCACAGAGTCAAGAGAGAG	ACATCAC GTGGCAAC GTGGCCAC CCAGCCAC CCAGCCAC	ACTCCATGACATCCATGACATCCAACATCCAACAACAACAACAACAACAACAACAAC
GTCATTAGCATCTGCACCACACAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG	CIGCIGCIGICCGIGITIGCCCCAGGATGGAAGATGAAAGATATCAACACA AAAAAAGAAGACGATGGAAGATGAAAGAATGAAAGATATCAACACA AAAAAAGAAGACAATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 11	GTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCTG	GTACGTGAGGTGACAGGTGTGAACATGCGCGTGGGCATCCACAGGGGGCGCGTGGTGTTTTTTTT	CTGCCAACCATATGGAGGCGGCCCGGGCCGGCCGATCCACATCACCCGGGCCACG CTGCAGTACCTGAACGGGACTACGAAGTGGAGCCGGCCGCGGGCCACG CTGCAGTACCTGAACGGGACTACGAAGTGGAGCCGGGCCGTGGTGGCAAGCGCGAAGCGG CTGCAGTACCTGAACGGGACTACGAGTGGAGCCGGGCCGCGGTGGCGAGCGGAACGCG TACCTCAAGGAGCACACTTGAGACTTTCCTCATCCTGGGCGCGCGGCGAAAACGGAAA	AGGCGCGATGCTGCCAAGCTGCAGGCGGGCGGGCCAACTCCATGGAAGGCCTG ATGCCGCGATGGTTCCTGATCGTGCTGCTGCACCTGAGGCTTCCGG
CAGAGGT 	TTGCCATG TCTACATA TCTACATG TCTACATG GCCTGGCA	GGTTTGAC GGTTTGAC GGTTTGAC ACTACTG? ACTACTG? TGGGGGTA	ACATGCGC ACATGCGC GGCAGTTC GGCAGTTC GGCAGTTC	GGGCCGG TGGAGCC/ 1 TGGAGCC TCCTCATC TCCTCATC	AGGGGACG TTTCCCGG TTTCCCGG ACAACCG ACAACCG TTTCCCGG TTTCCCGG TTTCCCGT TTCACCTT TCACCTT TCACCTT TCACCTT GGGCCT TCACCTT TCACCT TCACCT TCACCT TCACTT TCACCT TCA
TATCCAG TACCCAG TACCAG TACCA	CAGCATG CACAAGA CACAAGA TTCACCA TTCACCA	TTTGCCC	AATGTGA	GCCC TACGAGG TACGAGG GAGACTT GAGACCT	AAGCTGC CGTGCCT
SCACACAC 	GTTGCCCATGTTC GATGTTC TGAGGGC	ATGAGCTC ACGAGCTC ACGAGCTC ACTTGGGG ACTTAGGGG ACTTAGGGG ACTTAGGGG ACTGTAGGGGAGT ACTGTGTAGGGGAGT ACTGTGTAGGGGAGT ACTGTGTAGGGGAGT	.AGGTGTG 	'GGAGGCG 'CGGGGAC 'CGGGGCC	TICCTGAT I CONTROL GCCCGAC TICATICC TICATI
AGCATCTC 	111111 3AAGACA1 3AAGACA1 11111111 3CAGACA1	ACCCTGAA 	3AGGTGAC 1111111 3AGGTCCT 3GCGTCCT 11 11111 3GTGTCCT	AACCATATATATATATATATATATATATATATATATATA	AAGGCCAA CGATGGGT
901 1025 961 1085 1021	1145 1081 1205 1138 1265	1198 1325 1258 1385 1318	1378 1505 1438 1565	1625 1558 1682 1618 1742 1678	1802 1738 1862 1798 1858 1982 1918 2042
* 40	2 29 29 29	\(\frac{1}{2} \)	dy Qy Db	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	64 65 65 65 65 65 65 65 65 65 65 65 65 65

AGTGCCTGCGCGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC 3057 CCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA GTCTCTTGGCCAGCTCTGTTTTCCTGCACATCAGTAGCATCGGGAAGTTGGCC ACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGGAGATGGAGGAGCTA GCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT TGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA GTGAGGCCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG GTCTCTTGGCCCAGCTCTGCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC TTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC GGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG TGGTGTTTGCGCTGTGTGTTCTGCATGCTCAGCAGGTGGAATCGACTGCC ACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC CCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG GGTTCCGGCAGCTGGAAAAATCAAGACGATTGGTAGCACCTACATGGCTGCC TCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT

```
Examining the ischemic condition (e.g. occlusive ischemia) by measuring expression levels of particular genes defined in the specification or by determining the expression profile of a gene group comprising these
                                                                                                                                              3357
                                                                                                                                                                3481
                                                                                                                                                                                      3417
                                                                                                                                                                                                                              3477
                                                                                                                                                                                                                                                                      3537
                                                                                                      3297
                                                                                                                                                                                                         3541
                                                                       3302 GACTATGCCATGCGGCTCATGGAGCAGATGAACACATCAACGAGCACTCCTTCAACAAC 3361
                                                                                                                                                                                                                                                                                GAGGAGCGGTTCCGGCAGCTGGAGAAATCAAGACGATCGGTAGCACGTACATGGCTGCG 3241
                                                                                                                                                                                               AAGCCACAGTATGACATCTGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                                                                                                        TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT
                                                             GACTACGCCATGCGCCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                     TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                                                                                                                                                     GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                             TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTAC
                                                                                                                                                                                                                                                                     TTCCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGCCACAAATTCAGCTGAAGGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mouse; ischaemia; compressive ischaemia; occlusive ischaemia; vasospastic ischaemia; ischaemic condition; ischaemic disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ishii
                                                                                                                                                                                                                                                                                                                                                                                                                                              Mouse ischaemic condition related cDNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nagata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (UYNI-) UNIV NIHON SCHOOL JURIDICAL PERSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 2; Page 1771-1780; 2690pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Takahashi Y,
                                                                                                                                                                                                                                                                                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                                                                                                  ABI99680 standard; cDNA; 5841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2001; 2001WO-JP04192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000JP-0145977
                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                            AAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                         Asai S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-034733/04.
P-PSDB; ABB57257.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200188188-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                           07-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ishikawa K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genes
 3182
                                       3242
                                                            3178
                                                                                                                                            3298
                                                                                                                                                                                                       3482
                                                                                                                                                                                                                                                                                        3602
                    3118
                                                                                                                        3362
                                                                                                                                                                3422
                                                                                                                                                                                    3358
                                                                                                                                                                                                                            3418
                                                                                                                                                                                                                                                                    3478
                                                                                                                                                                                                                                                                                                             3538
                                                                                                                                                                                                                                                                                                                                3662
                                                                                                     3238
                                                                                                                                                                                                                                                3542
                                                                                                                                                                                                                                                                                                                                                            RESULT 6
ABI99680
엽
                   ò
                                      g
                                                                                                                                     ŏ
                                                                                                                                                           g
                                                                                                                                                                              δ
                                                                                                                                                                                                   g
                                                                                                                                                                                                                          οχ
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                           Q
                                                                                                   9
2
```

The present invention describes a method for examining ischaemic

```
5
         genes (I) in a test sample or determining the expression profile of a gene group in the sample comprising genes selected from (I). The method is useful for examining the ischaemic condition (e.g. compressive ischaemia, occlusive ischaemia or vasospastic ischaemia) by measuring expression levels of particular genes (AB199202 to AB199912, encoding the protein sequences in AB857020 to AB857374) or by determining the expression profile of a gene group comprising these genes. The expression levels or expression profiles produced by these genes are used as an indicator when screening for ischaemic condition-improving drugs or therapeutics for a mouse ischaemic condition related sequence, which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                 155
                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                         9
comprising measuring the expression levels of particular
                                                                                                                                                                                                                                                                      ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                            GAACGCAATGGGCAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                              CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                             CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGCCGCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCTGGGGGTCAGTGGCCTTGGGGTTTGACGACACTGAGGTGACCACACCGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCGGGACGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCGGTACTTTTTCCAGATGAACCAGAGCAGCCTGACGCTGGTGGTGGCGGTGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGCACTGTTGGCCCTGTGCCGCCCCTGTTCGTGGGGCTCATGGTGGTGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGTGCAGGTCGGGGGGGCGTTTCGCAGCAGACCCGCGCAGCCCCTCTGCGGGCCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCCCTGTGTTTTTTTTTATACATCGCATACACGCTCCTCCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781 GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                    Length 5841;
                                                                                                                                                                               Sequence 5841 BP; 1214 A; 1558 C; 1673 G; 1396 T; 0 other;
                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                      Score 2765; DB 24;
Pred. No. 0;
); Mismatches 445;
                                                                                                                                                                                                                               ó,
                                                                                                                                                                                                      77.9%;
ilarity 87.1%;
Conservative
                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                 Matches 3095;
                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              810
                                                                                                                                                                                                                                                                                                                                    156
                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                        273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            750
                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                      213
                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      721
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                          ò
```

q			QQ	1947 GAAGATGAGGT
Qy		SCACCAAC 90	δ,	1918 CGGAAGGACCAT
QQ	930 AGCGACCC	ACCGACCCCTTCCTTTGGAAGCAGCTCGTGCTAACGTGGTGCTCTTCCTCTGCACT 989	α Δ	2007 CGTAAGGACCAT
QY		GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCGTTTCAGGAG 960	g 5	2067 TATTCACGGAA
ΩD	990 GCCATCGG	STGTCTGCACACACTACCCTGCTGAAGTGTCTCAGCGCCAAGCTTTTCAGGAG 1049	ò	2038 TGCTTCATCTG
8 8	961 ACCCGCAG	ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGGGGG 1020 ACCCGCAGCTTACATCCAGCCCCGGCTCCACCTGCAGCATCGGCAGCAGCAGGGGGGGG	r d	2127 TGCTTCATCTG
3 . 8			δλ	2098 TATGCCAGCAT
д 2			QQ	2187 TATGCCGCTATC
ò			Óγ	2158 GGTTCTCTGTTC
· q			d d	2247 GGTTCTTCTT
Qy	1138 CTGTTTGC		yo 4	2218 CATAGCACCGC
අු	1230 CIGITIEC	GGACATTGAGGGCTTCACCAGCCTGGCCTCCCAGTGCACTGCACAGGAACTG 1289	3 8	SOUCH CHICAGO COCC
Qy	1198 GTCATGAC	GTCATGACCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCTG	ž 2	22/8 AIGIICACCIGI 2367 ATGTTTACCTG
ΟP	1290 GTCATGAC	CCTTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCTGCGGAGAATCACTGT 1349	3 8	SEACAGEOGEOCE
Οy		CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGAGGGCTGCCGGAGGCCCGG 1317	5 A	2427 CCAGCGGATGTC
QQ	1350 CTGAGGAI	140	ò	2398 CCCCTGTGTGAC
0y		GCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGCCATCTCGCTG 1377	: 쉽	2487 CCCCTGTGTGAC
qq			ò	2458 CIGCIGAGICIC
Qy		GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTG 1437	7 점	2547 CTGCTGAGTCTT
Op			οy	2518 ATGATCTTTGTC
δ	1438 CACTGCGG	CACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGAGGACC 1497	og og	1111 11 2607 ATGACCTTCAT
3		7	δy	2578 ATCTTTGACAAC
Oy Dp	1498 CTGGCCAP 1590 CTGGCTAP	TIGGCAACCACATGGAAGCAGGACCGGGCTGGCCGCATCCACATCGGGCAACA 1557 	QQ	11111111111111111111111111111111111111
l å			Qy	2638 TTTGATGGGCTC
3 6	547	CIGCASIACCIGARACGOGGRACIACCARAGIGGARGCCAGGCCAGGCGCAAGCGCAAACGCG 101/ 	qq	2727 TTTGATGGCTC
3 8		1 00	Oy	2698 ATTCTGCTGGTC
S &	207	TACCICARGORACACATIGASACITICCICATCTIGGGGGCCCAGAAACGGAAA 10// TITIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	qq	2787 ATTCTGCTGGTG
3 8			οy	2758 CGCCTAAACTTC
5 A	767		QQ	2847 CGCCTGGACTTC
ò		179	Qy	2818 CAGGCATACAAC
g qq			qq	2907 CAGGCATACAAC
Qy	1798 CAGATGGG	185	δŏ	2878 CTGGCCCGGGAG
QQ	1887 CAGATGGG	CAGATGGGCATTGATGATTGATGAAAGACAACGGGGTGCCCAAGATGCTCTGAACCCT 1946	Q :	2967 CTGGCCCGGGA
δλ	1858 GAGGATGA 	GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG 1917	g d	2938 AIGITIGCCICC

rggatgagttcctgggccgagccatcgatgcccgaagcatcgaccaactg 2006 GTTTTATCCAGCTCCTTGTGTTCCCATACTCCACCCTGATACTCGGGATT rcctaaggccctgcaacgtctgtcccgcagcattgtccgctcacgggca AGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG AGCGCGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTT SCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT PCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT 2AGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAAC STAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA PCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT PCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC ACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC rggactgtccagctgcaggagggtggccttcaaatatatgaccctgtg ICCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGAGAGATGGAGGAGCTA

```
Gilman AG,
                                                                                                                                                                                                                                              99
                                                                                                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                   173
                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                        293
                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                   350
                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
g
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                             рp
                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                  å
                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                  3326
                                                                                                                                                       3446
                                                                                                                                                                                                                          3536
                                                           3177
                                                                                                                                                                    3417
                                                                                                                                                                                  3506
                                                                                                                                                                                               3477
                                                                                                                                         AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG 3357
                                                                                                                                                                                                                                       TTCCTCAACGGGGCCCCCAGCAGTTAGCAGAGTGCAGCAGCTGAGATTCAACCGAAGGAC 3626
    GGTGCCGAGTGCCTGCGCGCTGCTCAACGAGATCATCGTGGCTTTGATGAGATTATCAGC
            TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCCTCGG
                                                                                                                                                                    GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                         TTCCTCAATGGGGGCCCCCAGCAGTTAACAGGGCCCCAGCCAC-AAATTCAGCTGAAGGGAC
                               GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                          TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT
                                                                                                                                                                                                                                                                                                                                                             cyclic AMP; adenosine monophosphate; screening; stimulation; inhibition; treatment; cholera; pituitary tumour; heart failure; ischaemia; endocrine disorder; cell necrosis; pseudohypoparathyroidism; endocrine deficiency; human; ss.
                                                                                                                                                                                                                                                                                                                                                       Adenylyl cyclase; type I; type II; recombinant; enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
4.3556
4/*tag= a
/product= Type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                          Type VI adenylyl cyclase coding sequence,
                                                                                                                                                                                                                                                                                                   BP.
                                                                                                                                                                                                                                                                                                  AAA53923 standard; cDNA; 4131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96US-0726214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95US-0005498
                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                   CAAGGTGGGCACT 3549
                                                                                                                                                                                                                                                          CAAGGTGGCATT 3639
                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                             03-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                              US6107076-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-0CT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-AUG-2000
                                                                                                                                                                                                                                                                                                                AAA53923;
                               3058
                                            3147
                                                         3118
                                                                       3207
                                                                                   3178
                                                                                                 3267
                                                                                                              3238
                                                                                                                          3327
                                                                                                                                        3298
                                                                                                                                                     3387
                                                                                                                                                                   3358
                                                                                                                                                                                3447
                                                                                                                                                                                                                        3478
                                                                                                                                                                                                                                      3567
                                                                                                                                                                                                                                                   3537
                                                                                                                                                                                                                                                                                                                                                                                               Ношо
                                                                                                                                                                                                                                                                 3627
                                                                                                                                                                                                                                                                                                                                                                                                             Key
                                                                                                                                                                                                                                                                                           AAA53923
                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                   셤
                                                                                                                         g
                                                                                                                                                    ΩQ
                                                                                                                                                                              g
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                               g
                                         8
                                                         ò
                                                                     g
                                                                                               g
                                                                                                              à
                                                                                                                                       Q
                                                                                                                                                                   ò
                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                   ò
    ò
                              à
                                                                                   õ
                                                                                                                                                                                                                        ò
```

```
A recombinant Adenylyl cyclase is described which lacks membrane bound domains. Separation and purification of the recombinant enzyme is much easier compared with wild type enzymes and the recombinant enzyme is more stable than the wild type enzymes which allows easier screening of compounds that stimulate and inhibit Adenylyl cyclase activity. The recombinant adenylyl cyclase comprises a chimera of adenylyl cyclase (1 and C_2 domains linked covalently. The domains may be linked by a linker peptide. The recombinant adenylyl cyclase is useful for screening inhibitors and stimulators of adenylyl cyclase activity. Inhibitors of the enzyme are useful for treating cholera, pitultary tumors, heart failure, ischaemia, endocrine disorders and cell necrosis. Stimulators of adenylyl cyclase are useful for treating pseudohypoparathyroidism and other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                349
                                                                                                                                                                               Novel soluble mammalian polypeptide composition comprising adenylyl cyclase activity for screening stimulators and inhibitors of adenylyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACGCAATGGGCAGAAGCGTTCGCGGCGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  233 ACTCGGTGCCCCTGGCAGGATGAAGCCTTCATCATCAGGAGGGCTGGCCCGGGAAGGGGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCGGGACGGCTGAGGTGCCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCCTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGCCGGTGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           530 CTCCTCATGGCTGTACTGTTGACCTTCCACGCCGCGCCTGCCCTGCCTCAGCCTGCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGGCACTGTTGGCCTGTGCCGCCGCCCTGTTCGTGGGGGCTCATGGTGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                463; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4131 BP; 835 A; 1190 C; 1182 G; 924 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 2751.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                    Disclosure; Columns 75-78; 73pp; English.
                                                                                                                                                                                                                                   cyclase, is activated by Gsalpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77.5%;
86.7%;
(TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 3080; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         endocrine deficiencies
                                                                                                  2000-578539/54
                                                 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                           P-PSDB; AAB02010.
```

4;

660 709 720 769 8829 889	0 0 0 0 0 0	113 113 113 113 113 113 113 113 113 113	1309 1317 1369 1377 1429 1437	1497 1549 1557 1609 1617 1669 1677
CATAGCTTCCGCCAGGACTCCATGTGGGTGAACGTGGTGCTGGCCTGGCCTGGCCGCATCCTGGCG CATAGCTTCCGCCAGGACTCCATGTGGGTAACGTGGTGCTGGCTG	GGTGATGCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGG	CTGCTGCTGGTATTGCCCCAGGACGTTGCATGGAGATGAAAGAAGACATCAACAC [1]	CTGAGGATCAAGATCTTGGGGGACTGTTCGACAAGCTGGGTGGG	CACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGTGTCGTCCAATGATGTGGCCCCTGCTGCCCCTGGTCGCTGTGTGTTGTTGTTG
601 650 661 710 770 781 830	4 6 0 6 7 6	1021 1070 1081 1130 1138 1190	258 258 310 318 370 378	1438 1490 1550 1558 1610 1610 1670
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		oy oy	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

CGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGGGAGATGGAGGAGCTA 2817 CGGAAGGACCATGTGCCCCGGTTTTTGCTCACCTTCCAGAGAGGATTTTGAGAAGAAG GGTTCTCTCTTCTCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG ATTCTGCTGGTGTTTGCGCTGTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC GAGGATGAGGTGGATGCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG TACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTTGGTCTTC ATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCCACCCAAGATGCCCTGAACCCT TATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTACTCCTGT CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC oy Op QY Db Op QY OY Db ζ g ò g

us-09-750-240-5.rng

```
Score 1808.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 5; Page 115-119; 153pp; English.
                  Location/Qualifiers
1..1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51.0%;
99.9%;
                                                                                                                                                                                                                   2000WO-US35411
                                                                                                                                                                                                                                                       99US-0472667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 1809; Conservative
                                                                                                                                                                                                                                                                                        (REGC ) UNIV CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-418260/44.
P-PSDB; AAE04309.
                                                                                                                                                                                                                                                                                                                             Gao M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of the invention
                                                                                                                                               WO200148164-A2
                                                                                                                                                                                                                   26-DEC-2000;
                                                                                                                                                                                                                                                     27-DEC-1999;
                                                                                                                                                                                                                                                                                                                             Hammond HK,
                                                                                                                                                                                05-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303
                    Key
   NAME OF THE PARTY 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; cardiant; beta-adrenergic signalling protein; beta-ASP; myocardium; gene therapy; beta-adrenergic receptor; beta-AR; adenylylcyclase; adenylytecase; adenylytecase; camb synthetase; G-protein receptor kinase; GKK; heart disease; congestive heart failure; cardiac adenylcyclase VI; ACVI isoform; beta-ASP transgene; ss.
                                                                                                                                                                                                                                                                                                                                          3117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3535
                                                                                                                                                                                                                 3177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3230 GACTACGCCATGCGGCTTATGGAGCAAATGAAACACATCAACGAACACTCTTTCAACAAC 3289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3530 TICCTCAATGGGGGCCCCAGCAGTTAGCAGAGCGCACGAGTGGAAATTCAACCAAAGGGA 3589
GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC 3057
                                                                        GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAAGGGGGAGATGACCACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3478 ITCCICAAIGGGGCCCCAGCAGITAACAGGGCCCA--GCCACAAAIICAGCIGAAGGGA
                                                                                                                                                                                               ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG
                                                                                                                                                                                                                                                                                        TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                                                                                                                                          GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                                                                                                                                                                                                                             TTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                     CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human partial cardiac adenylcyclase VI (ACVI) isoform #2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA; 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3536 CCAAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3590 CCAAGGTGGGCACT 3603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAD08562 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAD08562;
                2810
                                                    2818
                                                                                       2870
                                                                                                                        2878
                                                                                                                                                          2930
                                                                                                                                                                                                                                  2990
                                                                                                                                                                                                                                                                                                       3050
                                                                                                                                                                                                                                                                                                                                                                                                               3118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3418
                                                                                                                                                                                               2938
                                                                                                                                                                                                                                                                     2998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3238
                                                                                                                                                                                                                                                                                                                                          3058
                                                                                                                                                                                                                                                                                                                                                                            3110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                    ð
                                                                                   q
                                                                                                                     δ
                                                                                                                                                    g
                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                  Ob
                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
The present invention relates to methods and compositions for enhancing cardiac function in mammalian hearts by inserting transgenes encoding beta-adrenergic signalling proteins (beta-AsP) which increase beta-adrenergic responsiveness within the myocardium using in vivo gene therapy. The beta-ASPs of the invention include beta-adrenergic receptors (beta-AR), adenylylycyclases (also referred as adenylycyclase, adenylate cyclase and cAMP synthetase) and G-protein receptor kinase (GRK) inhibitors. The beta-ASP is used for enhancing cardiac function in mammalian heart failure. The present consequence encodes human partial cardiac adenylcyclase VI (ACVI) isoform which is used for generating a third beta-ASP transgene, used in the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel polynucleotide encoding a modified adenylylcyclase polypeptide useful for enhancing cardiac function in mammalian hearts, and for treating heart disease, especially congestive heart failure -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
/*tag= a
/product= "Human partial cardiac ACVI isoform #2"
/note= "CDS does not include start and stop codon"
/EC_number= "4.6.1.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                636 TAACGTGGTGCTGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                243 TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 TAACGTGGTGCTGGGCATCCTGGCGCCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      696 GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        876 TGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCTCAGCGCCAGGCCTTTCAGGAGCCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1812;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1812 BP; 361 A; 539 C; 507 G; 405 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 22;
```

ö

congestive heart ot gene therapy Fig 12A; 114pp; English for useful 60; Claim

from the present invention. The present invention describes a recombinant replication-defective viral particle (I) comprising a gene encoding a beta-adrenergic signalling protein (beta-ASP) operably linked to a promoter. Also described are: (1) a recombinant pro-viral plasmid (Ia) comprising a gene encoding a beta-ASP, as above, operably linked to a promoter and further comprising a replication-defective viral genome; (2) a (mammalian) cell transfected with (I) or (Ia); (3) an isolated polynucleotide comprising a sequence encoding a human adenylicyclase isoform VI (AC-VI), or a variant having AC activity; (4) a human AC-VI encoded by (3); (5) an isolated polynucleotide comprising the polynucleotide of (3); (1) can be used to form a comprising the polynucleotide of (3). (1) can be used to form a cardiac function in mammals. present sequence encodes human adenylylcyclase isoform VI The

T; 2 other; Sequence 2127 BP; 421 A; 637 C; 615 G; 452

ö 1115 1175 1235 1295 GCATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGCGTATTGCCCCAGCACGTTGCCAT 1055 GTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGA 1355 815 875 995 695 755 935 617 677 797 917 977 437 497 557 377 Gaps GCGCAGCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCT CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA 678 GCATGAGAATCGGCAGCAGCAGCGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT GAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATC CCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAA GCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTGTGT 2127; ; DB 19; Length Score 1808.4; I Pred. No. 0; 0; Mismatches 51.0%; Conservative Best Local Similarity Matches 1809; Conserv Query Match 1056 318 378 618 969 438 918 498 918 558 738 1116 1176 1236 989 936 966 798 828 756 918 1296 978 ò a ò g ò Q ò g Qγ g ò Q à g ò q ολ g õ g δ g

2255 1655 1397 1457 2015 1697 2075 2195 2315 2117 1157 1277 1337 1895 1757 1877 1997 2057 CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG GGGCGCCAGCCAGAAACGGAAAGAGGAGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTCG GGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGAC CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGA GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTGCCC CATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGT 1038 CATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAAATGTGAACATGCGCGT TGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCG CCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCATCCT CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAAACGGGG TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGGTTTTTGCTCACCTTCCA GAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGT TGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACA CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCT CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCT GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG GTTTACTTCTGCCATGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC TTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCC 1098 1476 1536 1218 1716 1776 1458 1518 1896 1578 1956 1638 2016 2076 2136 2196 1878 1938 2316 1356 1416 1158 1596 1278 1656 1338 1398 1836 1698 1758 1818 2256 2376 2058 g δλ a οy g δý g δy g οy q ŏλ qq ò q δ g οy g οy qq δý QQ δy g δ qq δy g ò qq οy g ò g 573

921

513

453

861

393 801

```
ATGGAGATGAAAGAAGACATCAACACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTAC 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTG 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTTGGGTATTGCCCCAGCACGTTGCC 1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1582 GCGTCCCAGTGCACTGCACAGGAACTGGTCATGACCTCAACGAGCTCTTCGCCCGCTTT 1641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTGTGTCTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGG 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1351 GTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATG 1410
                                                                                                                                                                                                                                                                                                                                 982 CTCATCATGGCTGTGCTTTGCAACCGCGCCGCCTTCCACCAGGACCACATGGGCCTGGCC 1041
                                                                                                                                                                                                                                                                                                                                                                                              1042 TGCTATGCGCTCATCGCCGTGGTGCTGGCCGTCCAGGTGGTGGCGGCCTGCTGCTGCCGCAG 1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCGTCTCGGGGCTGCCTGAAGCAAGGGCTGACCACGCCCACTGCTGTGTGGAGATGGGC 1761
                                                                                                                                                                                                                                                                                                  GTGTCTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTG 993
 922 GCGCGCCCCCCGCTCCAGCTGCCCTACCTGGCCGTGCTGGCGGCCGCCGCCGTCGCGTGATC 981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGACGCTGCTGGTGCTGGTGCTGCTGCTCACAGCGGTGCTGCTGCTTTCCAAGCC
                                                                                                                                                                                                                                      GCACCCGCCCCCCCTCAGCCTGCCTATGTGGCCACTGTTGGCCTGTGCCGCCGCCCTGTTC
                                                                 AGTAACGTGGTGCTGGCCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCTCCACCTTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGTGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTTCGGCCAAGCTGGACCCCTGTACCAGCGGTACTTTTTCCAGATGAACCAGAGCAGC
                                                                                                                             CCGTCGGACAAACTGGAGCGGCTGTACCAGCGCTACTTCTTCCGCCTGAACCAGGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                              TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACAAGCTGCCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTAC
                                               CCCAGGAGTGGGCGATCCTGCTGGCGCCGTTTGGTGCAGTGTTCCAGTCCAGTCGAAGCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCCGGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1642
                685
                                               334
                                                                            745
                                                                                                          394
                                                                                                                                         802
                                                                                                                                                                        454
                                                                                                                                                                                                       862
                                                                                                                                                                                                                                      514
                                                                                                                                                                                                                                                                                                                                                                634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1702
                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                             δy
                                                                           9
                                                                                                        ò
                                                                                                                                     g
                                                                                                                                                                        δý
                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This sequence encodes the human type V adenylyl cyclase (hAC5) of the invention. hAC5 has a similar putative structure to other adenylyl cyclase isoforms but, like type VI, is distinguishable in that it has a larger N-terminus and a relatively shorter C-terminus as it lacks the C2D region. The hAC5 polypeptides are useful in assays that screen for potential therapeutic agents, which modulate hAC5 activity. These polypeptides are also useful in assays for the diagnosis of diseases and disorders. Agonists of hAC5 are useful control agents in such assays, and they may have useful effects in vivo for treating disease. Antibodies acting as (ant)agonists have diagnostic and therapeutic effects, and are useful in immunoassays for hAC5. (Anti)agonists are particularly useful in creating diseases caused by abnormal hAC5 activity (e.g. In the heart and brain), and in diseases, which are alleviated by modulating hAC5 activity. The oligonucleotides are useful in methods that inhibit or requilate hAC5 expression in vivo and in vitro. The cloning of the human isotype of AC5 enables the development of tissue-specific and selective pharmacological agents for use in treating particular human diseases second as a considered with hAC5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGGAGGGGCGGCCCAGGCAAGGGCAAGGAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTC 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 274 GAGGATACCGAGGTGACAACGACAGCGGGGGGGGACGGCTGAGGTGGCGCCCCGACGCGGTG 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Newly isolated and purified human type V adenylyl cyclase (hAC5) polypeptide - useful for identifying potential therapeutic agents that modulate hAC5 activity, and for the diagnosis of hAC5-associated diseases and disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 4523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36;
                                                                                                                                                                                                                                      cyclase; human; hAC5; heart disease; brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   911; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4523 BP; 840 A; 1419 C; 1428 G; 836 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  48.0%; Score 1703.4; DB 20; 71.3%; Pred. No. 0;
                                                                                                                                                                                                     Human type V adenylyl cyclase coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 3; Fig la-h; 40pp; English.
                                                                                                        AAX00462 standard; DNA; 4523 BP.
                                                                                                                                                                                                                                                                                                                                                                                                           97US-0886362.
97US-0070901.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CORT-) COR THERAPEUTICS INC
                                                                                                                                                                                                                                                                                                                                                                             98WO-US13540.
                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-106048/09.
P-PSDB; AAW30600.
                                                                                                                                                                                                                                                      therapy; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
TGAGGTGTCC
              1111111 |
2118 TGAGGTGTTC
                                                                                                                                                                                                                                    V adenylyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pomlinson JA;
                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                               WO9901546-A1
                                                                                                                                                                                                                                                                                                                                                                             01-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                           01-JUL-1997;
01-JUL-1997;
                                                                                                                                                                      25-MAY-1999
                                                                                                                                                                                                                                                                                                                                              14-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Sim
Matches 2356;
                                                                                                                                       AAX00462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  214
                                                                           RESULT 10
                                                                                                                                                                                                                                      Type
                                                                                        ò
                             g
```

ò 셤 ŏ

933

a	1762	ATGGACATGATCGAGGCCATCTCGTTGGTCCGGGAGGTGACAGGGGTGAACGTGAACATG 1821
ò	1411	
g 2	1822	CGTGTGGGAATTCACAGCGGCGGTACACTCCGGGTGTCCTTGGTCTCAGGAAGTGGCAG 1881
yo 4	1471	TTCGATGTGTGCTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCT 1530
à	1531	
g ,	1942	200
oy D	1591	CCAGGCCGTGGTGGCAACGCGTACCTCAAGGAGCACATTGAGACTTTCTC 1650 [
QY	1651	ATCCTGGGCGCCAGCCAGAAACGGAAAAGGGAAAAGCCTGCTGGCCAAGCTGCAGCG 1710
δλ B	1711	
ογ	1771	
qq	2182	AACCACCTGGGTGGCAACCAGGTGTCCAAGGAGATGAAGGGGTTTGGAAGACCCC 2241
oy og	1819	AGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTC 1878
δ d	1879	CTGAGCCGTGCCATCGATGCCCGCAGCATTCATCAGCTGCGGAAGGACCATGTGCGCCGG 1938
3 8	1030	733
g cy	2356	TTTTTCCTCACCTTCCAGAGAGGATTTTGAGAAGAACAACGGGAAGGTGGATCCC 1998
Qy	1999	CGCTTCGGAGCCTACGTTGCCTGTGGCCTGTTGTGCTTCATCTGCTTCATCCAG 2058
G G	2059	CTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTG 2118
Qy Dp	2119	CTGCTAATCACCGTGCTGATCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGC 2178
Oy Dp	2179	CTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATC 2238
Qy Dp	2239	TITICGICCIGCTIGIGITIACTICIGCCATIGCCAACAIGITCACCIGIAACCACC 2298
δ	2299	
a .	91/7	
Oy Dp	2359	CACCTGCAGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGC 2412
Qy Dp	2413 2836	ACCATCCCACCTGCAGCTTTCCTGAGGTGTCCATGGGGAACATGCTGCTGAGTCTCTTG 2472

2592 2712 2772 3249 2952 3012 3429 3072 3489 3132 3252 3312 3372 2892 3309 3192 3609 3729 3909 2896 GCCTGCTCCGTGTTCCTGCAGCTGCATCGGGAAGCTGGTGCTCATGCTGGCCATC 3370 GCCAACTICTCCGAGTICTACGTIGAGCTGGAGGCCAACAACGAGGGTGTCGAGTGCCTG GCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTG GACCTACTGCTTGCCTTCGCTTCGCTTCTTCAATGAGACCTTTGATGGGCTGGAC GACCTGCTGGTCACCGCCAACGCCATGTTCA---ACAACGGGACCTCCCAGTGC CCTGAGCATGCAAGGTGGATTGAAGGTGGTGACGCCCATCATCTCAGTCTTT 3130 GTGCTGGCCCTGTACCTGCACGCCCAGGAGGTGGAGTCCACTGCCCGCCTCGCTGCTTCCTC TGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGG AGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCCACTTCCTGGCCCGGGAGCGC CGGCTGCTGCACAACATCCTGCCCAAGGACGTGGCCGCTCACTTCCTGGCCCGCGAGCGG CAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCC 3490 CAGCTGGAGAAGATCAAGACCATCGGCAGCACCTACATGGCTGCCTCCGGCCTCAACGAC CTCATGGAGCAGATGAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATT GGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTAT TGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTT GCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTC GCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTG CGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGG AGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGG 3495 ပ္ပ 3730 3013 2653 3190 2833 3250 2893 3310 3073 3133 3550 3610 3670 3850 2593 2773 3013 3430 3193 3253 3790 2473 2533 2956 3070 2713 2953 3313 3373 3433 3493 QY Db qq Qy Db Dβ οy 90 OX OY Db Ω οy dy Oy q g g δy Dp δ qq δy οy δŽ ŏ Db Qγ g ŏ

111 CCC 3912

3910

g

us-09-750-240-5.rng

702 885 762 945

```
AAAGAAGACATCAACACAAAAAAAAGAAGA---CATGTTCCACAAGATCTACATACAGAAG 1119
                                                                                                                                                                                                                                                                                                         CATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAG 1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGC 1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGT 1599
                                                                                                                                                                                                                        943 CGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAG 1002
                                                                                                                                                                                                                                                           1003 AATCGGCAGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCCAGCACGTTGCCATGGAGATG 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                             1300 GGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATG 1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACATCACCAAGGCCACACTCAGCTACCTGAACGGTGACTACGAGGTGGAGCCAGGCTGC 1785
                                                                                                                                                                                                                                                                                                                                                                                                                   CCCTCTGCGGGCCTCTGGTGCCTGTGTTTGTATACATCGCATACACGCTCCTCCCC
  GTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGACCCGCGCAGC
                                               886 GCCTCCGAGGCATCTGGTGGACCGTGTTCTTCATCTACACCCATCTACACGCTGCTGCCC
                                                                                                             763 AICCGCAIGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTG
                                                                                                                                                GCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTG
                                                                                                                                                                                     883 CTGTTCCTCTCCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                         GCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGTGTCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATC
  583
                                      643
                                                                          703
                                                                                                                                                823
                                                                                                                                                                                                                                                                                              1063
                                                                                                                                                                                                                                                                                                                 1246
                                                                                                                                                                                                                                                                                                                                   1120
                                                                                                                                                                                                                                                                                                                                                                                                         1240
                                                                                                                                                                                                                                                                                                                                                                                                                          1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1786
               g
                                     οχ
                                                  g
                                                                   QΫ́
                                                                                        8
                                                                                                      οy
                                                                                                                         q
                                                                                                                                               OY
Db
                                                                                                                                                                                ŏλ
                                                                                                                                                                                                 g
                                                                                                                                                                                                                       QY
Db
                                                                                                                                                                                                                                                     ΟŻ
                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                              Qy
Db
                                                                                                                                                                                                                                                                                                                                                Б
                                                                                                                                                                                                                                                                                                                                                               δŽ
                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                     OY
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
  2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                  5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        582
                                                                                                                                                                                                                                                                                                                                   effector enzyme cardiac adenylyl
                                                                                                                                                                                                                                                                                                                                                                                                                  CACCCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGG 224
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCAGGCAAGGCCAAGGAGCTGGGGCTGCGGCAGTGGCCCTGGGCTTCGAGGATACCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGGGGGCTGCTGCTGCTGCTGCTGCTTCCGCTCCAAGAAGTTCCCGTCGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCCCTCAGCCTGCCTATGTGGCCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTGACAACGACAGCGGCGGGACGGCTGAGGTGGCGCCCGACGCGG--TGCCCAGGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           343 GGGCGATCCTGCTGCCGCCGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCTGGAGCGCCTGTACCAGCGGTACTTTTTCCAGATGAACCAGAGCAGCCTGACGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGTGGCGGTGCTGCTGCTCACAGCGGTGCTGGCTTTCCAAGCCGCACCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                  20;
                                                                                                                                                                                                                                                                                                                                                                                Length 4356
                                                                                                                                                                                                                                                                                      corresp. DNA - having specified
                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                            Sequence 4356 BP; 836 A; 1372 C; 1373 G; 775 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                              DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 980;
                                                                                            SS
                                                                                            enzyme;
                                                                                                                                                                                                                                                                                                                                                                              47.6%; Score 1690; 70.1%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                 AAQ95540 encodes AAR78519, the novel
                                                                                                                            Location/Qualifiers
148..3702
/*tag= a
                                                                                          Cardiac adenylyl cyclase; effector
                                                                                                                                                                                                                                                                                                                                                                                                .,
                    BP
                                                                       Cardiac adenylyl cyclase gene
                                                                                                                                                                                                                                                                                                                 Claim 1; Fig 2; 45pp; Chinese
                   AAQ95540 standard; DNA; 4356
                                                                                                                                                                                                                                                                                      Cardiac adenylyl cyclase and
                                                                                                                                                                                                                       92US-0899068
                                                                                                                                                                                                     92TW-0105242
                                                       (first entry)
                                                                                                                                                                                                                                         (AMCY ) AMERICAN CYANAMID
                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                         WPI; 1995-214006/28.
P-PSDB; AAR78519.
                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
es 2348; Conserv
                                                                                                                                                                                                     02-JUL-1992;
                                                                                                                                                                                                                       12-JUN-1992;
                                                                                                            sapiens
                                                      31-JAN-1996
                                                                                                                                                                                   21-MAR-1995
                                                                                                                                                                  TW243453-A.
                                                                                                                                                                                                                                                                                                sednences
                                    AAQ95540
                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                          cyclase.
                                                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                  346
                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                    225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      523
à
                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

1845

1125

942

90 64 90 64	QY	Qy	Qy Db	Oy Dp	oy Ob	연 연	do g	da g	A A .	λο QO	da da	RE: AA(X X X X	X X DE X	X X X X	H F F X	XX
										-	•						_
1719 1905 1779	1965 1837 2025	1893 2085	1953 2145	2013	2073	2133 2325	2193 2385	2253 2445	2313 2505	2367	2427	2487	2547	2607	2667	2727 2922	2787
	AACTCCATTGGGCCACACCGCCCCACTGGGGGGCCGAACGTCCCTTCTACAACCACCTA GACTCCAAGGCCTTCCGCCAGATGGCATTGATGATCCAGCAAGAAAAACGGGGCA	CCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATC	GATGCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTC	CAGAGAGGGGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTAC	GTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCA	CACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTATCACCGTG	CTGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAAGGTCTGTCC	CGCAGCATTGFCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTT	GTGTTTACTTCTGCCATGCCAACATGTTCACCTGTAACCACCCCCATACGGAGCTGT	GCAGCCCGGATGCTGAATTTAACACCTGCTGACATCACTGCCTGC	CAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGGGGGCACCATGCCACCTGC	AGCTITCCTGAGGTGTCCATGGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGTCTTC	CTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGCTCATCTATTGCTIII	GIGCIGCTICTGCTGGGTCCCCCAGCGGCCATCTTTGACAACTATGACCTACTGCTTGGC	GTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGCAGGG	AGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCTGTAT	CTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGCA
1660	1780 1780 1966	1838	1894	1954 2146	2014	2074	2134	2194	2254	2314	2368	2428	2488	2548	2608	2668	2728
oy oy	9 % ea	Q D	Qy	Qy Dp	S d	Qy Dp	Oy Db	Oy Db	Oy Dp	Oy Dp	QQ QD	Oy Op	Qy Db	Qy	O.y D.b	Oy Dp	δλ

```
2847
2923 CTGCATGCCCAGCAAGTGGAGTCCACCGCCCGCCTCGACTCCTCTGGAAACTGCAGGCC 2982
                                                                                                    2983 ACGGAGGAGAAAGGAGGAGATGGAGGCTGCAGGCCTACAACCGGCGGCTGCTGCACACAAC 3042
                                                                                                                                                                           2848 ATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGAACTC 2907
                                                                                                                                                                                                        2908 TACTATCAGTCGTGTGAGTGTGTGTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAG 2967
                                                                                                                                                                                                                                                                                                         3103 TACTACCAGTCGTGCGAGTGCGTGTCATGTTCGCCTCCATCGCCAACTTCTCCGAG 3162
                                                                                                                                                                                                                                                                                                                                                                                2968 TTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGGCTGCTCAACGAG 3027
                                                                                                                                                                                                                                                                                                                                                                                                             3163 TICTACGTGGAGCTTGAGGCCAACAATGAGGGTGTCGAGTGCCTGCGCGTGCTCAATGAG 3222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3028 ATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATC 3087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3223 ATCATCGCTGACTTTGATGAGATCATCAGCGAGGATCGGTTCAGGCAGCTGGAGAAGATC 3282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3208 AAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGC 3267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3403 AAGTACATCAATGAGCACTCCTTCAACATCCAGATGAAGATCGGGCTCAACATCGGC 3462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3268 CCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAACACA 3327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3463 CCCGTGGTGGCCGGGGTGATCGGGGCTCGCAAGCCTCACTACGACATCTGGGGCAATACG 3522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3328 GIGAATGICICIAGICGIAIGGACAGCACGGGGGICCCCGACCGAAICCAGGIGACCACG 3387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3388 GACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGTCAAG 3447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3583 GACATGTACCAGGTGTTGGCTGCCAACACGTACCAGGTGCAGGGGTGTGGTCAAG 3642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACV; therapy; diagnostic; cardiac function; cyclic AMP; cAMP; heart; failure; ss.
                                                                         2788 ACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3448 GTGAAGGCCAAGGGGAGATGACCACCTACTTCCTCAATGGGGGCCCC 3495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cardiac adenylyl cyclase type V gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
148..3702
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAQ37543 standard; cDNA; 4356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-JUN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Canis familiaris.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP529622-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAQ37543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESULT 12
AQ37543
                               ۵
                                                                                                                                                                                                                               ٩
                                                                                                                                                                                                                                                                                                                                                                                                                                     Δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Δ
```

Mon Mar

```
Left ventricular tissue of canine heart was used as a source of mRNA. A cDNA library was prepd. in lambda gt10 phage. A 970 bp Aat-HincII fragment from type I adenylyl cyclase cDNA was used as probe. The clones isolated were used to obtain cDNA encoding CACV. This probe may also be used to screen a human cardiac cDNA library to obtain the cDNA encoding human CACV. CACV, its analogues and antibodies are useful in therapy or diagnostic assays, e.g. in modifying and determining cardiac function. A decrease in CACV content of the heart contributes to impaired cAMP prodn. and in heart failure. The CACV can also be used to screen for cpds. which stimulate or inhibit
                                                                                                                                                                                                                                              type
                                                                                                                                                                                                                                            solated nucleic acid mol. encoding Cardiac adenylyl cyclase - useful for determining and modifying cardiac function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4356 BP; 837 A; 1367 C; 1377 G; 775 T; 0 other;
                                                                                                                                                                                                                                                                                                 Claim 1; Page 15-27; 38pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the activity of the cyclase.
                                                                       91US-0751460
                                    92EP-0114637
                                                                                                            (AMCY ) AMERICAN CYANAMID
                                                                                                                                               Ishikawa Y, Konski AF;
                                                                                                                                                                                  WPI; 1993-068688/09
                                                                                                                                                                                                                                           nucleic
                                                                                                                                                                                                        P-PSDB; AAR32882
                                                                     29-AUG-1991;
                                    27-AUG-1992;
03-MAR-1993
                                                                                                                                                                                                                                           Isolated
```

462 645 405 402 522 705 765 642 825 Gaps CACCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGG CCCAGGCAAGGGCAAGGAGCTGGGGGCAGTGGCCCTGGGCTTCGAGGATACCGA CTCGGTGGAGCTGGGCCTGGACGAGCGGCGGGGCCGGGCCGCCGGAGCCCGA CGGCGGCCTGCTGCCGCGCGCGCTGCAGATCTTCCGCTCCAAGAAGTTCCCGTCGGAC GGTGACAACGACAGCGGCGGGACGGCTGAGGTGGCGCCCGACGCGG--TGCCCAGGAGT AAGCTGGAGCGCCTGTACCAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTG CTGGTGGCGGTGCTGCTGCTCACAGCGGTGCTGCTGGCTTTCCAAGCCGCACCCGCC CTCATGGCCGTGCTGCTCGTGCCTCGTGATGCTGGCCTTCCACGCGGCGCGCCCCC CGCCCTCAGCCTATGTGGCACTGTTGGCCTGTGCCGCCGCCTGTTCGTGGGGCTC ATGGTGGTGTGTAACCGGCATAGCTTCCGCCAGGACTCCATGTGGGGGGGTGAACGTG GGGCGATCCTGCTGCCGCTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCC Query Match 47.6%; Score 1688.4; DB 14; Length 4356; Best Local Similarity 70.1%; Pred. No. 0; Matches 2347; Conservative 0; Mismatches 981; Indels 20; 981; Indels Pred. No. 0; 0; Mismatches 346 225 285 343 992 165 406 466 526 403 463 646 523 902

Op

à

a Q

Qγ

P G

Oy Oy Oy

702

703 CCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCC 762

GTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGCGCCTTTCGCCAGCAGCCCGCGCAGC

```
1245
                                                                                                                                                                                                                                                                                                                                                                              1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1719
                                                                                          1065
                                                                                                                                                     1002
                                                                                                                                                                                                                                                                                               1365
                                                                                                                                                                                                                                                                                                                                                          1299
                                                                                                                                                                                                                                                                                                                                                                                                  1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCCATTGGGCACAACCCGCCCCACTGGGGGGCCGAACGTCCCTTCTACAACCACCTA 1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1780 GACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCA-- 1837
           945
                                                                                                                                                                                                                                                                          946 GTGCGCATGCGGGCCGCCGTCCTCAGCGGAGTGCTCCTGTCGGCCCTGCACCTGGCCATC
                                                                      GCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTG
                                                                                         1006 GCCCTGCGCGCCAACGCCCAGGACCGGTTCCTGCTCAAGCAGCTCGTCTCCAATGTCCTC
                                                                                                             883 CTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGGTGTCTCAG
                                                                                                                                                     CGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAG
                                                                                                                                                                                             AATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATG
                                                                                                                                                                                                                                    AAAGAAGACATCAACACAAAAAAAGAAGA---CATGTTCCACAAGATCTACATACAGAAG
                                                                                                                                                                                                                                                                                                                  TGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTG
                                                                                                                                                                                                                                                                                                                                                          GCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGTGTCA
                                                                                                                                                                                                                                                                                                                                                                     GGCCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGGTAGACATG
                                                                                                                                                                                                                                                                                                                                                                                                             1486 GGGCTGCCTGAAGCGAGGCCGACCACGCCCACTGCTGCTGCAGGAATGGGCATGGACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCCACAGGGGGGGGGGGTGCACTGCGGCGTCCTTGCGGAAATGGCAGTTCGATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1540 CACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1660 GCCAGCCAGAAACGGAAAGAGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGC
                                                                                                                                                     943
                                                                                                                                                                                           1003
                                                                                                                                                                                                                1186
                                                                                                                                                                                                                                    1063
                                                                                                                                                                                                                                                                                                                  1180
                                                                                                                                                                                                                                                                                                                                                          1240
                                                                                                                                                                                                                                                                                                                                                                             1426
                                                                                                                                                                                                                                                                                                                                                                                                 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1600
                               763
           9
                             Qγ
                                              D
                                                              οŽ
                                                                                   qq
                                                                                                             QY
Db
                                                                                                                                                                 οq
                                                                                                                                                                                         ò
                                                                                                                                                                                                         qq
                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                  Db
Qy
                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                            Qy
Db
                                                                                                                                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                       Dp
                                                                                                                                                                                                                                                                                                                                                                                               οχ
                                                                                                                                                                                                                                                                                                                                                                                                              Db
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
```

ů,

Oy Dp DP OY DP

à

m

Mar

Mon

```
2145
                                                                                                   2013
                                                                                                                                          2073
                                                                                                                                                                                  2133
                                                                                                                                                                                                      2325
                                                                                                                                                                                                                       2193
                                                                                                                                                                                                                                                                2253
                                                                                                                                                                                                                                                                                   2445
                                                                                                                                                                                                                                                                                                     2313
                                                                                                                                                                                                                                                                                                                                                               2565
                                                                                                                                                                                                                                                                                                                                                                                   2427
                                                                                                                                                                                                                                                                                                                                                                                                                         2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3102
                                                                                                                                                                                                                                                                                                                                            2367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2907
GGAGGCAACCAGGTGTCCAAGGAGATGAAGCGCATGGGCTTCGAAGACCCCCAAGGACAAG 2025
                              AGGGAGCCTGACTTAGAAAGAAGTACTCCAAGCAGGTGGATGACCGATTCGGTGCCTAC
                                                                                                                                                                                                                                   TTTGTGTCCGGGATCTATTCCTGCGTGAAGCTCTTCCCGGGCCCGCTCCAGAGCCTCTTC
                                                                                                                                                                                                                                                                        GITGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCA
                                                                                                                                                      CTGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCC
                                                                                                                                                                                                                                                               CGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTT
                                                                                                                                                                                                                                                                                                                                                             CTGGCGGACGACACATCAGCACCAGCGGGTCAACGCGTGCCACGTGGCGGCGTCG
                                                                                                                                                                                                                                                                                                                                                                                              GGGCCAACCTCAGCCTGGGCGACGAGGGCTTCTGCGGGCACGCCCTGGCCCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                        AGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTTGGGGCTCATCTATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----CCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATC
                                                                                                   CAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCCGCTTCGGAGCCTAC
                                                                                                                                                                                 CACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTG
                                                                                                                                                                                                                                                                                                    GTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACCCCCCATACGGAGCTGT
                                                                                                                                                                                                                                                                                                                                           CAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2743 GTGCTCGTCGTCGAGGTGCCCCGGGTCACACTGTTTGACAACGCTGACCTGCTGGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCAACGCCATAGACTTCAACAACAACGGGACCTCGCAGTGCCCTGAGCACGCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTTGCGCTGGCGCTGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAGGGAAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGCCCCCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTTGCTCACCTTC
                                       2026
                                                                                                                      2146
                                                                                                                                        2014
                                                                                                                                                                                                                                                              2194
                                                                                                                                                                                                                                                                                                                       2446
                                                                                                                                                                                                                                                                                                                                                                                 2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                               2488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2923
 1966
                                                          1894
                                                                                                 1954
                                                                                                                                                            2206
                                                                                                                                                                                2074
                                                                                                                                                                                                   2266
                                                                                                                                                                                                                      2134
                                                                                                                                                                                                                                          2326
                                                                                                                                                                                                                                                                                                                                                              2506
                                                                                                                                                                                                                                                                                                                                                                                                                        2428
                                                                                                                                                                                                                                                                                                                                                                                                                                           2626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2848
                   1838
                                                                               2086
                                                                                                                                                                                                                                                                                 2386
                                                                                                                                                                                                                                                                                                    2254
                                                                                                                                                                                                                                                                                                                                                                                                    2566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3043
a
                   ò
                                    QΩ
                                                      ò
                                                                        g
                                                                                              oy
Oy
                                                                                                                                                       Б
                                                                                                                                                                              ò
                                                                                                                                                                                             ga V
                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                      oy
Op
                                                                                                                                                                                                                                                                                              9
9
9
9
9
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                      Dy
Oy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
```

```
3447
                                                                                                              3147
                                                                                                                                                                                                           3462
                                     3027
                                                                          3087
                                                                                             3282
                                                                                                                                                    3207
                                                                                                                                                                      3402
                                                                                                                                                                                         3267
                                                                                                                                                                                                                             3327
                                                                                                                                                                                                                                                                  3387
2967
ATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATC
                                                                                                                       AAGACCATTGGCAGCAGCACCAACATGGCCGCCTCAAGACCATGACATGACATACACAAAG
                                                                                                                                                             CCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAACACA
                                                                                                                                                                                                                                       ATCATCGCTGACTTTGATGAGATCATCAGCGAGGATCGGTTCAGGCAGCTGGAGAAGATC
                                                                                                              AAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCCAGCACCTACGATCAG
                                                                                                                                                     GTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCCCATGCGGCTCATGGAGCAGATG
                                                                                                                                                                                         AAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGC
                                                                                                                                                                                                                                                                                                      GACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cyclic AMP; adenosine monophosphate; screening; stimulation; inhibition; treatment; Cholera; pituitary tumour; heart failure; ischaemia; endocrine disorder; cell necrosis; pseudohypoparathyroidism; endocrine deficiency; human; ss.
                                                                                                                                                                                                                                                                                                                                                   3643 GTCAAGGGCAAAGGCGAGATGATGATGATTTCCTCAACGGTGGGCCC 3690
                                                                                                                                                                                                                                                                                                                                         GTGAAGGGCAAGGGGGAGATGACCACCTACTTCCTCAATGGGGGCCCCC 3495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= a
/product= Type V adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Adenylyl cyclase; type I; type II; recombinant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sednence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
3..3329
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                          ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 adenylyl cyclase coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95US-0005498.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96US-0726214
                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                           standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                              03-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-OCT-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-OCT-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JS6107076-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                         AAA53922
                                                                                                                                                                                                                                                                                                                                                                                                                             AAA53922;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Type V
                  3103
                                                                                                                                3283
                                                                                                                                                                                                            3403
                                                                                                                                                                                                                                                                                                                        3583
                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
AAA53922
2908
                                     2968
                                                      3163
                                                                           3028
                                                                                             3223
                                                                                                                                                                      3343
                                                                                                                                                                                                                             3268
                                                                                                                                                                                                                                                                  3328
                                                                                                                                                                                                                                                                                   3523
                                                                                                                                                                                                                                                                                                      3388
                                                                                                                                                                                                                                                                                                                                          3448
                                                                                                                3088
                                                                                                                                                    3148
                                                                                                                                                                                         3208
                                                                                                                                                                                                                                               3463
               g
                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                     δ
                                                    음
                                                                        δy
                                                                                           Op
                                                                                                              δ
                                                                                                                              g
                                                                                                                                                   ōλ
                                                                                                                                                                   g
                                                                                                                                                                                        \delta
                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                         δ
```

Mon Mar

```
(TEXA ) UNIV TEXAS SYSTEM
```

3 AG, Gilman

2000-578539/54

P-PSDB; AAB02009

Novel soluble mammalian polypeptide composition comprising adenylyl cyclase activity for screening stimulators and inhibitors of adenylyl cyclase, is activated by Gsalpha cyclase activity for cyclase, is activated

Disclosure; Columns 65-70; 73pp; English.

bound domains. Separation and purification of the recombinant enzyme is more stable than the wild type enzyme and the recombinant enzyme is more stable than the wild type enzyme which allows easier screening of compounds that stimulate and inhibit Adenylyl cyclase activity. The recombinant adenylyl cyclase comprises a chimera of adenylyl cyclase c_l and c_2 domains linked covalently. The domains may be linked by a linker peptide. The recombinant adenylyl cyclase is useful for screening inhibitors and stimulators of adenylyl cyclase activity. Inhibitors of the enzyme are useful for treating cholera, pituitary tumors, heart failure, ischaemia, endocrine disorders and cell necrosis. Stimulators of adenylyl cyclase activity processes. Stimulators of adenylyl cyclase activity processes activity and the enzyme are useful for cyclase are useful for treating pseudohypoparathyroidism and other recombinant Adenylyl cyclase is described which lacks membrane endocrine deficiencies.

Sequence 3924 BP; 860 A; 1103 C; 1110 G; 851 T; 0 other;

Gaps Length 3924; 873; Indels DB 21; Score 1648.2; Pred. No. 0; 0; Mismatches 46.4%; ilarity 71.4%; Conservative Local Similarity Matches 2265; Match

9

345 GCGATCCTGCTGCCGCTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAA 404 464 247 524 307 584 644 427 704 487 764 547 824 607 884 667 944 CTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCAT GCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGACCCGCGCAGCCC CCCTCAGCCTGCCTATGTGGCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGGCTCAT GGTGGTGTGTAACCGGCATAGCTTCCGCCAGGACTCCATGTGGGGTGGTGAGTAACGTGGT 368 TGTGCTCTGCAACCGTGCAGCCTTCCACGACCACAGGGCCTGGCTGCTATGCGCT CCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGC CTGGCAACTTAACCGTGGTGATGCCTTCCTCGGAAGCAGCTCGGTGCCAATGTGCTGCT GTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCG 405 GCTGGAGCGCCTGTACCAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCT 608 TCTGCACCCAACGCCCAGGACCAGTTTCTGCTGAAACAGCTTGTCTCCAACGTCCTCAT 465 248 585 308 428 525 645 705 488 165 ò g ò g õ Q ŏλ g οy g οy Db δ g g ò à g δ

668 CTICTCTTGCACCAACATCGTGGGTGTGTGCACTCACTACCCAGCCGAGGTCTCCCAGAG 727

g

1087 1147 1421 1207 1481 1267 1541 1601 1387 1661 1447 1721 1507 1121 1241 1027 1301 1361 1771 -CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGCGATTGATGATTCCAGCAAAGACAA 1829 CATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGGTTTTTGCTCAC 1949 945 CCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAA 1004 847 967 1268 GTCTAACGATGTCACACTGGCCAACCACATGGAAGCTGGCGGCCAGGCCAGGCCGCATCCA 1388 TGGTGAGCGCAATGCCTACCTCCAAGGAGCACCATCGAGACCTTCCTCGTCGCCTG AGAAGACATCAACACAAAAAAAAAGAAGA----CATGTTCCACAAGATCTACATACAGAAGCA 968 TACTGCCCAAGAACTGGTCATGACCCTCAACGAGCTCTTCGCCCGCTTTGACAAGTTGGC TGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGTGTCAGG 1028 TGCGGAGAATCACTGCTTACGGATTAAGATCCTCGGGGATTGTTACTACTGTGTCTCGGG 1302 GCTGCCGGAGCCCGGGCCGACCATGCCCACTGCTGTGTGGGAGATGGGGGTAGACATGAT 1362 TGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCAT CCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCGGAAATGGCAGTTCGATGTGTG GTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCA TGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGCGC 1662 CAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAA CTCCATTGGACACAATCCGCCTCACTGGGGAGCTGAGCGCCCCTTCTACAACCACTTGGG 1568 TGGCAACCAGGTGTCCAAGGAAATGAAGAGATGGGCTTTGAGGACCCCA----AGGA CCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGC CATCGATGCCAGGAGTATTGACAGACTGCGATCCGAACACGTCCGAAAGTTCCTCTTGAC 1950 CTTCCAGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGC TCGGCAGCAGCGGCTGCTGTCGGTATTGCCCCCAGCATTGCATGGAGTAA TGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTG CACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGC CATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGG 728 ACAAGCCTTCCAGGAGACCCGGGAGTGCATCCAAGCTCGGCTCCACTCACAGCGGGAGAA 848 AGCAGACATCAACGCCAAACAGGAGGATATGATGTTCCACAGAGTTTACATCCAGAAACA 1722 CTCCATGGAAGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCC------1242 1422 1602 1890 1182 1742 Db 셤 O. D. g a g g g a á à g õ g οχ ద Ω 셤 õ δ ò ò ò δ ογ ò g Ω g Q 셤 δ Q δ

m

Mar

Mon

```
2189
                                                                                                                                                         2309
                                                                                                                                                                                                                                                                         2483
                                                                                                                                                                                                                                                                                                               2543
                                                                                                                                                                                                                                                                                                                                                     2603
                                                                                                                                                                                                                                                                                                                                                                                           2663
                                                                                                                                                                                                                                                                                                                                                                                                              2455
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGA 3143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGGCAGCTGGAAAA 3083
                                                 CTACGTTGCCTGTGCTCTTCTGCTTCTGCTTCTGCTTCATCCAGCTTCTAATTTT
           CCTGGTGTTCCTCTCGGCTTTTGTCAACATGTTCATGTGCAACTCTAAGAACCTGGTGGG
                                                                                                                                                                                                                                                                                                              CTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGGCTCATCTA
                                                                                                                                                                                                                                                                                                                                                               GACCAAGGTGGCGCTGAAGGTGGTGACGCCCCATCATCTCTCTGTGCTGGTGGTGGTGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCAC
                                                                                       GTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCT
                                                                                                                                                        GCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAG
                                                                                                                                                                                            G-----CTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCAC
                                                                                                                                                                                                                                                                        CTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGT
                                                                                                                                                                                                                                                                                    TITGGIGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCT
                                                                                                                                                                                                                                                                                                                                                                                         TGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                            CACCGCCAATGCCATAG----ACTTCAGCAACAACGGGACCTCCCAGTGCCCTGAGCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCAACAGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAACATTCTGCCCAAGGACGTGCCTGCCCACTTCCTGGCCCGGGAGCGCGCCAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTCTACTATCAGTCGTGTGTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                AGGGAGGGTGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCT
                                      2070
                                                                           2130
                                                                                                                                     1982
                                                                                                                                                                         2042
                                                                                                                                                                                             2310
                                                                                                                                                                                                                                                                                                                                2282
                                                                                                                                                                                                                                                                                                                                                                                                            2399
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2844
 2010
                   1802
                                                                                              1922
                                                                                                                 2190
                                                                                                                                                        2250
                                                                                                                                                                                                                                  2370
                                                                                                                                                                                                                                                     2162
                                                                                                                                                                                                                                                                       2424
                                                                                                                                                                                                                                                                                          2222
                                                                                                                                                                                                                                                                                                             2484
                                                                                                                                                                                                                                                                                                                                                                                                                               2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2816
                                                                                                                                                                                                                                                                                                                                                    2544
                                                                                                                                                                                                                                                                                                                                                                      2342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3084
 ò
                 g
                                     ò
                                                   Q
                                                                                           qq
                                                                                                                              g
                                                                                                                                                 oy
Dp
                                                                                                                                                                                      oy
Op
                                                                                                                                                                                                                              9
9
9
9
                                                                                                                                                                                                                                                                                      0
0
0
0
0
                                                                                                                                                                                                                                                                                                                                              ογ
                                                                                                                                                                                                                                                                                                                                                                  Op
                                                                                                                                                                                                                                                                                                                                                                                  Qy
Db
                                                                                                                                                                                                                                                                                                                                                                                                                           oy
Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                       οy
                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
Human; adenylyl and guanylyl cyclase; ADGUC-2; cardiovascular disorder; angina pectoris; myocardial infarction; vision disorder; keratitis; iritis; cataract; neurological disorder; epilepsy; Alzheimer's disease; pick's disease; stroke; mental disorder; mod and anxiety disorder; reproductive disorder; infartility; endometriosis; impotence; asthma; smooth muscle disorder; migraine; bacterial infection; gene therapy; transgenic animal; vaccine; enzyme; ss.
                                                                                        3055
                                                                                                            3323
CAAGGCAGGCAAGACCCACATCAAGGCTCTTGCAGACTTCGCCATGAAGCTGATGGACCA
                                                                    GATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGGCTGAACAT
                                                                                                             GGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAA
                                                                                                                                                    CACAGTGAATGTCTCTAGTCGTATGGACAGCGGGGGTCCCCGGACCGAATCCAGGTGAC
                                                                                                                                                                                           CACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Elliott
                                                                                                                                                                                                                                            CAAGGTGAAGGCCAAGGGGAGATGACCACCTACTTCCTCAATGGGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lee EA, Yu
Tang YT,
                                                                                                                                                                                                                                                                                                                                                                 Human adenylyl and guanylyl cyclase (ADGUC)-2 cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lu DAM,
Walia NK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Human ADGUC-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
1..2514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ding L,
Yao MG,
                                                                                                                                                                                                                                                                                                       BP
                                                                                                                                                                                                                                                                                                      standard; cDNA; 3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000US-215476P.
2000US-223545P.
2000US-229876P.
2000US-234838P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000US-236483P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001WO-US20491
                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ú
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (INCY-) INCYTE GENOMICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Thornton M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tribouley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2002-154740/20.
P-PSDB; AAE17130.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200202757-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-AUG-2000;
31-AUG-2000;
22-SEP-2000;
29-SEP-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-JUN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                             22-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AR,
MR,
                                                                                                                                                                                                                                                                                                      AAD28058
                                                                                                                                                                                                                                                                                                                          AAD28058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Baughn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gandhi
                                                 2936
                                                                                                                                3056
                                                                                                                                                                       3116
                                                                                                                                                                                                                                                    3236
                             3144
                                                                                                                                                    3324
          2876
                                                                                                             3264
                                                                                                                                                                                           3384
                                                                                                                                                                                                                                  3444
                                                                                                                                                                                                                                                                                   RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Key
                                                                                                                                                                                                                                                                                             AAD28058
                                                                                     g
                                                                                                                                                                                                            g
                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                      8
                             δ
                                               Db
                                                                    δ
                                                                                                            Óχ
                                                                                                                              g
                                                                                                                                                  QY
                                                                                                                                                                     g
                                                                                                                                                                                          οy
```

Novel human adenylyl and guanylyl cyclases and polynucleotides encodi the cyclases, useful for treating, diagnosing or preventing cardiovascular, neurological, vision, reproduction and smooth muscle disorders

5; Page 112-113; 116pp; English Claim

The invention relates to human adenylyl and guanylyl cyclases (ADGUC) preferably ADGUC1-ADGUC5 and nucleic acid molecules encoding such preferably ADGUC1-ADGUC5 and nucleic acid molecules encoding such polypeptides. ADGUC sequences are useful in the diagnosis, prevention and treatment of cardiovascular disorders (e.g. angina pectoris, myocardial infarction, ischaemic heart disease, hypertension and atheroscleroscles), vision disorders (e.g. keraticis, iritis, cataract), neurological disorders (e.g. epilepsy, Alzheimer's disease, pick's disease, Huntington's disease, dementia, parkinson's disease, pick's disease, Huntington's disease, dementia, mental disorders including mood and anxiety and prion diseases including kuru), reproductive disorders (e.g. infertility, endometriosis, importence, uterine fibroid and gynaecomastia), smooth muscie disorders (e.g. arrhythmias, asthma and migraine) and bacterial infections.

ADGUC polynucleotides are useful for creating knock-in humanised animals or transpenic animals to model human diseases. They are useful in sommatic or generaline gene therapy. ADGUC polynucleotides are also useful to creating differences in the chromosomal location due to the individuals abcut on view or animals or addition inversion, etc. among normal, carrier or affected. individuals. ADGUC polypeptides are useful in a number of drug screening techniques and in vaccines. The present sequence is human ADGUC-2 cDNA.

Sequence 3137 BP; 553 A; 973 C; 1044 G; 567 T; 0 other;

Gaps 93; Indels Length 500; Score 843; DB 24; Pred. No. 7.6e-195; 0; Mismatches 23.8%; Matches 1286; Conservative Similarity Query Match Local

CGGAGGGGCGCCCAGGCAAGGGAAGGAGCTGGGGGCTGCGGGCAGTGGCCCTGGGCTTC 273 214 à

5

cecceeecaaceccececceccaceacereaaceccecccccccaceaceccac GAGGATACCGAGGTGACAACGACAGCGGGCGGGACGGCTGAGGTGGCGCCCGACGCGGTG 712 274

g

δy g Ω

CCCAGGAGTGGGCGATCCTGCTGGCGCCGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTC ---TGTCCCTGGGGCCCTGCTGCCTTGCTGCAGATATTCCGCTCCAAGAAGTTC ڻ 772 334 832 g

CGTTCGGCCAAGCTGGAGCGCCTGTACCAGCGGTACTTTTCCAGATGAACCAGAGCAGC 889 394 g οy

1008 CTGACGCTGCTGGTGCTGGTGCTGCTCACAGCGGTGCTGCTGGCTTTCCAAGCC 949 454 δy OD

GCACCCGCCCGCCTCAGCCTGTTGTGGCCACTGTTGGCCTGTGCCGCCGCCCTGTTC GCGCGCCCCCGCTCCAGCTGCCCTACCTGGC-514 1009 QY Db

δ

qq

AGTAACGTGGTGCTGGCGGCAGCGCGCAGTCGGGGGGCGCTTTCGCAGCAGAC 1041 q Óλ

CCGCGCAGCCCCTCTGCGGGCCTCTGGTGCTTCTTTGTATACATCGCATACACG 1120 694 ÓΥ g

813 CTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCCCACCTTGCAT 754 δλ

1710 2313 1180 CTGCTGCCCGTGCGCATGCGGGCCGCAGTGCTCAGCGGGGGTGCTCCTGTCCGCCCTCCAC 1239 1720 TGCGTCTCGGGGCTGCCTGAAGCAAGGCTGACCACGCCCACTGCTGTGTGGAGTGGGC A----AGGACAAGAACGCCCAGGAGAGTGCGAACCCTGAGGATGAAGTGGATGAGTTT CAGCATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCC 1054 ATGGAGATGAAAGAAGACATCAACACAAAAAAAAGAAGA----CATGTTCCACAAGATCTAC ATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTG 1540 ATCCAGAAAACATGACAACGTGAGCATCCTGTTTGCTGACATCGAGGGCTTCACCAGCCTG GACAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTAC 1160 GACAAGCTGGCCGCAGAGAATCACTGTTACGTATTAAGATCCTTGGGGATTGTTATTACTAATTACGTTGTTATTAC TGTGTGTCAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGATGGGG GTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATG CGCGTGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAG TTCGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCT 1531 GCCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGGACTACGAAGTGGAG CCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTC ATCCTGGGCGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGG 1711 ACTCGGGCCAACTCCATGGAAGGCCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCC CAGAGAACCAACTCCATCGGGCACAACCCACCACACTGGGGGGCTGAGCGCCCCTTCTAC 2200 AACCACCTGGGTGGCAACCAGGTGTCCAAGGAGAGAGGGGATGGGCTTTGAAGACCC TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCC 1240 CTGGCCATCGCCTGCGCACCAACGCCCAGGACCAGTTCCTGCTGAAGCAGCTTGTCTCC AATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGAGG GTGTCTCAGGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTG GCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCCGGTTT -CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCCATTGATTCC AGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTC 1600 1960 2080 2140 1171 1231 1351 1471 2020 2260 1111 1900 1651 1819 814 1771 934 994 Db g δy g Dp ò g ά g ò g δy рp ò q Ω qq δ g δy g δy g Qγ οy Óχ g ò g δ g δy g δ 염 ò

13;

ŏ g õ a οy 셤 ò 셤

```
8 \times 6 \times 6 \times 6
                                                                                                                                               g
                                                                                                                                                                          δ
                                                                                                                                                                                               δ
                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                            2493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A recombinant Adenylyl cyclase is described which lacks membrane bound domains. Separation and purification of the recombinant enzyme is much easier compared with wild type enzymes and the recombinant enzyme is more stable than the wild type enzyme which allows easier screening of compounds that stimulate and inhibit Adenylyl cyclase activity. The recombinant adenylyl cyclase comprises a chimera of adenylyl cyclase (2 domains linked covalently. The domains may be linked by a linker peptide. The recombinant adenylyl cyclase is useful for screening inhibitors and stimulators of adenylyl cyclase activity. Inhibitors of the enzyme are useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        soluble mammalian polypeptide composition comprising adenylyl se activity for screening stimulators and inhibitors of adenylyl
                                                                                                                CTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGG
                                                                    CTGGGCCGTGCCATTGACGCCAGGAGCATTGATAGGCTTCGGTCTGAGCACGTCCGCAAG
                                                                                                    CGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAG
                                                      TTTTTGCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCC
                                                                                                                                                                                                                                                                                                                            Adenylyl cyclase; type I; type II; recombinant; enzyme; cAMP; cyclic AMP; adenosine monophosphate; screening; stimulation; inhibition; treatment; cholera; pituitary tumour; heart failure; ischaemia; endocrine disorder; cell necrosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             alpha
                                                                                                                                                                                                                                                                                                     Adenylyl cyclase type I-C1 C1 alpha domain coding sequence.
                                                                                                                                                                                                                                                                                                                                                                            pseudohypoparathyroidism; endocrine deficiency; human; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            C
                                                                                                                                                                                                                                                                                                                                                                                                                                                            IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Adenylyl cyclase type I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Columns 29-32; 73pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
103..3507
                                                                                                                                                                                                                                   ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cyclase, is activated by Gsalpha
                                                                                                                                                                2494 ATCACCATCGTGCCCCAGT 2512
                                                                                                                                                                                                                                 CDNA; 3978
                                                                                                                                                  CTTCTAATTTTCCCACACT 2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95US-0005498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96US-0726214
                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag= a
/product=
                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TEXA ) UNIV TEXAS SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000-578539/54.
                                                                                                                                                                                                                                AAA53918 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tang W;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P-PSDB; AAB02005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cyclase activity
                                                                                                                                                                                                                                                                                                                                                                                                  sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-OCT-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-OCT-1995;
                                                                                                                                                                                                                                                                               03-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US6107076-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gilman AG,
                                                                                                                                                                                                                                                        AAA53918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel
                                                                                                                                                                                                                                                                                                                                                                                                 Ношо
                              2314
                                                      1939
                                                                            2374
                                                                                                    1999
                                                                                                                                                2059
        1879
                                                                                                                         2434
                                                                                                                                                                                                          RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                        Key
                                                                                                                                                                                                                     AAA53918
```

```
976 CAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGTCGGTA 1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           918
                                                                                                                                                                                                                                                                                                    153 GCCACCCAGCCCCACCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCAT 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  205 CTGCGGGCGTGCGATGAGGAGTTCGCGTGCCCCGAGCTGGAGGCGCTGTTCCGCGGCTAC 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       619 PICGIGICCIAIGCCCIGCIGCCGIGCGCAGCCIGCIGGCCAICGGCTICGGGCTCGGGCTCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 384
                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                           84
                                                      other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               679 GIGGCCGCCTCGCACCTGGTCACGGCTACGTTGGTCCCCCCAAGCGCCCACGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25 GCGCCCGGCGCCTCGCCCCCCCCCCCGCCGGCCGCCGGCGAGGGGCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                              CCGGAGGGCCGCCCAGGCAAGGCAAGGAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85 ccecrecareccerecerecereceeecececececeeeceaeceeeceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         273 CGAGGATACCGAGGTGACAACGACAGCGGGGGGGGGCTGAGGTGGCGCCCCGACGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      333 GCCCAGGAG----TGGGCGATCCTGCTGGCGCCGTTTGGTGCAGGTGTTCCAGTCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                388 CAGTICCGITCGGCCAAGCIGGAGCGCCTGTACCAGCGGGTACTITITCCAGAIGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    265 ACGCTGCGGCTGGAGCAGCCGCGACGCTGAAGGCGCTGGCCGTGCTCAGCCTGCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             448 AGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTGCTCACACAGCGGTGCTGCTGGCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             508 CAAGCCGCACCCGCCCGCCCTCAGCCTGCCTATGTGGCACTGTTGGCCCTGTGCCGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 568 CTGTTCGTGGGGCTCATGGTGGTGTGTAACCGGCA-----TAGCTTCCGCCAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  445 recerseasgreceeasgracasgrassresseersseerseersererererere
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCGGCGGCAGTGCAGGTCGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTTTCGCAGCAGCCCGCGCAGCCCCTCTGCGGGCCTCTGGTGTGTTCTTTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            564 -----GGCAGCGGTGCCGGCGACAGCCGATCAGGGAGTCTGGCAGCTCCTTTTGGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   739 TACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             799 CTCTCCACCTTGCATT --- TGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          856 TGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCCACCAACGTCATTAGCATCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       916 ACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGAGGATCCTGGCTGAGGGCGCCCAGAGGCCTTCCTGCAGGCCCGGAACTGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        859 GAGGACCGGCTGAGGCTGGAGGATGAGAATGAGAAGCAGGAGCGGCTGCTCATGAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     385 GGCTCGCACCCCGTGCACTGCCTCTTCCTGGCGCTGCTCGTGGTCACCAACGTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               treating cholera, pituitary tumors, heart failure, ischaemia, endocrine disorders and cell necrosis. Stimulators of adenylyl cyclase are useful for treating pseudohypoparathyroidism and o
                                                                                                                                                                                       Length 3978;
                                                                                                                                    BP; 708 A; 1213 C; 1275 G; 782 T; 0 other;
                                                                                                                                                                                       16.8%; Score 595; DB 21; 51.9%; Pred. No. 2.1e-134;
                                                                                                                                                                                                                                                 0; Mismatches 1485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                             endocrine deficiencies
                                                                                                                                                                                                                    Similarity
                                                                                                                                    Sequence 3978
                                                                                                                                                                                                                          Best Local Sim
Matches 1750;
                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                              213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            619
```

```
2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2736
                                                                                                                                                                                                                                                2175
                                                                                                                                                                                                                                                                                                 2415
                                                                                                                                                                                                                                                                                                                                                                                                2475
                                                                                                                                                                                                                                                                                                                                                                                                                                              2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3132
                                                                                                 2295
                                                                                                                                               2116
                                                                                                                                                                                                                                                                                                                                               2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2956 AACTICTCTGAGTTCTATGTGGAGCTGGAGCAAACAATGAGGGTGCCGAGTGCCTGCGG 3015
2176 GCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGC 2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----AGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCC 3186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATG 3246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ------TGTGTGGGCTGCCTGGCTTGGTCCTGGAGCTCCCAACGGGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                              2228 regrecrererrereseseseceseseceasrecrecre-recesecererer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3076 CTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2008 AGTGTGGCTGTCCTGCTGCTGGTGTTCTGCATCTGCTTCCTGGTGGCCTGTGTCCTG
                                                                                              ATCITITCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCAC
                                                                                                                                                                                                ACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTGACATCACTGCC
                                                                                                                                                                                                                         2117 AGATCGCACCGTCTTGTGCATCTTCATCGTGGTCTTAATCTACTGTGGCCCAAGGC-
                                                                                                                                                                                                                                                                                                                                                                                                2416 ATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2287 ececceracecracians and a second contraction of the contraction of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2536 CICATCIAITIGGIGCIGCTICIGCIGGGICCCCCAGCCGCCATCTIIGACAACIAIGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2596 CTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------GGTACACGAAGGCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2656 CCAGCTGCAGGGGGGGGCCCTCAAATATATGACCCCTGTGATTCTGCTGTGTTTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2437 GGGGCCGGTGCCATCTCAGGGCGCAGCTTCGAGCCGATCATGGCCATCTGCTATTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2557 GCGCCCAGGCAGAGGAGGAGGGGGATGACATGGAGAAAGTGAAGCTGGACAACAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2836 CTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2896 AATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGGCTGTTATGTTTGCCTCCATTGCC
                                                                                                                                            2068 TACCTACACATCACCCGGGT------CCAGTGTTTTCCAGGGTGCTGACCATC
                                                                                                                                                                                                                                                                                                 2356 TGCCACCTGCAGCTCCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2476 AGCTCTGTCTTCCTGCACATCAGCACGAAGTTGGCCATGATCTTTGTCTTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2407 CTGGAGCTCAGCG--------
                                                                                                 2236
                                                                                                                                                                                                2296
                                                                                                                                                                                                                                                                                                                                             2176
                                                                                                                                                                                                                                                                                                                                                                              Oy
Oy
Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                 셤
                                                                                            QΫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          αq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

sedinence (Sedinence (

Sequence

```
RESULT 1
US-09-000-097-5
; Sequence 5, Application US/09008097
; Patent No. 6306830
; GENERAL INFORMATION:
APPLICANT: Hammond, H. Kirk
APPLICANT: Flosel, Paul A.
APPLICANT: Flosel, Paul A.
APPLICANT: Prost, Steven R.
APPLICANT: Post, Steven R.
APPLICANT: Gao, Meihua
; APPLICANT: Gao, Meihua
; TITLE OF INVENTION: GENE THERAPY FOR CONCESTIVE
; TITLE OF INVENTION: HEART FAILURE
; NUMBER OF SEQUENCES: 9
; CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON & FORKSTER
STREET: T55 PAGE MILL ROAD
CITY: PALO ALTO
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: USA
ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARF: FASTSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/008,097
US-08-997-362-123
US-09-095-855-123
US-09-204-245-123
US-08-997-080-176
US-08-997-080-176
US-08-997-080-176
US-09-997-855-176
US-09-095-855-176
US-09-095-855-176
US-09-097-852-173
US-09-097-862-173
US-09-097-855-173
US-09-097-855-173
US-09-097-855-173
US-09-097-855-173
US-09-097-855-173
US-09-205-426-173
US-09-205-426-173
US-09-205-426-173
US-08-486-273-444
US-08-486-273-444
                                                                                                                                                                                                                                                                                                                                             US-08-940-086A-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING LAIL:
ATTORNEY/AGEN,
NAME: Dylan, Tyler M
REGISTRATION NUMBER: 37,612
REFERENCE/DOCKET NUMBER: 22000-20567.21
TELEPHONE: 650-4913-5600
TELEFAX: 650-494-0792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: Coding Sequence LOCATION: 1...3501
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 3549 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEX: 706141
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
    CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE
    Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 6, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 6, Appli
Sequence 1, Appli
                                                                                                                                  February 28, 2003, 22:03:11; Search time 86.927 Seconds (without alignments) 12520.796 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                               1 atgtcatggtttagtggcct........3aggggaccaaggtgggcact 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1: /cgn2_6/ptcdata/1/ina/5A_COMB.seq:*
2: /cgn2_6/ptcdata/1/ina/5B_COMB.seq:*
3: /cgn2_6/ptcdata/1/ina/6A_COMB.seq:*
4: /cgn2_6/ptcdate/1/ina/6B_COMB.seq:*
5: /cgn2_6/ptcdata/1/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptcdata/1/ina/PCTUS_COMB.seq:*
                    GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-474-076-1
US-07-793-961A-1
US-08-726-214-11
US-08-726-214-11
US-09-726-214-1
US-09-726-214-1
US-09-726-214-1
US-09-726-214-1
US-08-726-214-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-232-463-14
US-08-997-080-123
                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US95-11808-6
US-08-894-173-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-473-717-1
US-09-398-193-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-398-193-1
                                                                                                                                                                                                                                                                                                                                                                441362 segs, 153338381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                  nucleic search, using sw model
                                                                                                                                                                                                                                                                                                     IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                      US-09-750-240-5
3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33999

33999

44044

44044

44044

4404

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4400

4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    314
2092
2092
2092
4473
4473
4985
7218
1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                  OM nucleic
                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                            ..
00
```

Result Ş.

US-09-008-097-5

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1020
                                                          120
                                                                        120
                                                                                       180
                                                                                                    180
                                                                                                                   240
                                                                                                                                 240
                                                                                                                                               300
                                                                                                                                                             300
                                                                                                                                                                            360
                                                                                                                                                                                         360
                                                                                                                                                                                                        420
                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                       900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   960
               Gaps
                                           9
                             9
                                                                                                                                                                                                                                                                                                                      CATAGCTTCCGCCAGGACTCCATGTGGGTGGTCAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                   GAACGCAATGGGCAGAAGCGTTCGCGGCGCCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                  CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                           CTGCTCACAGCGGTGCTGCTGGCTTTCCAAGCCGCACCCGCCCCCCCTCAGCCTGTAT
                                                                                                                                                                                                                                                                        CIGCTCACAGGGGTGCTGCTGCCTTTCCAAGCCGCACCGCCCCGCCCTCAGCCTGAT
                                                                                                                                                                                                                                                                                                  ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGGAAAACAGCCTGGGGT
                                                                                      CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                  CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGGGGCGCCCAGGCAAGGGCAAG
                                                                                                                                               GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG
                                                                                                                                                                           GGCGGGACGGCTGAGGTGCCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                     CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                   CAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGTGCTGGTG
                                                                                                                                                                                                                                                                                           GIGGCACTGTIGGCCTGTGCCGCCCCCTGTTCGTGGGGGCTCATGGTGGTGTAACCGG
                                                                                                                                                                                                                                                                                                                                                                               TGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCCATCCGCATGCGGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                            GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCATTAGCATCTGCACACACTATCCAGCAGGTGTCTCAGCGCCCAGGCCTTTCAGGAG
               ;
0
 3549;
 Length
               Indels
 4,
               ö
DB
Score 3549; Pred. No. 0; Mismatches
100.0%; Sc
100.0%; Pr
tive 0;
               Conservative
        Similarity
Query Match
Best Local Simi
Matches 3549;
                             ч
                                           Н
                                                                                     121
                                                                                                                                               241
                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
                                                          61
                                                                       61
                                                                                                    121
                                                                                                                  181
                                                                                                                                181
                                                                                                                                                             241
                                                                                                                                                                           301
                                                                                                                                                                                                       361
                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                     841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                961
                                                        ò
                                                                                                07
07
08
                                                                                                                                          8 & B
                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                 O.
Db
                                                                                                                                                                                                                                                                                                                                               9
9
9
9
9
                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                          g
                                                                   QQ
                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

QY	1021	CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAGAAGACATCAACAA 1080
Qy Db	1081	
Oy Db	1141	IGCTICACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGT/
Qy	1201	GACCTGAATGAGCTCTTTGCCGGTTTGACAAGCTGGCTGG
Qy Db	1261	igactgttactactgtgtgtcagggctgccggaggcccggc
Qy Db	1321	ATGGGGTAGACATGATTGAGGCCATCTCGCTGGTA 1
QY Dp	1381	3AGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTGCAC 1
Qy Dp	1441	GCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGACCCTG
Qy	S S	AGGAAGCCGGGTGGCCGCATCCACATCACTCGGGCAACACTG 1
Oy Dp		GGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAAGGCGTAC 1
Qy Dp		GCAGCACATTGAGACTTTCCTCATCCTGGCGCCCAGCCAG
Qy	1681	JATGCTGGCCAAGCTGCAGCGGACTCGGCCAACTCCATGGAAGGGCTGATG 1 2
Qy Db	1741	GTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAG 1
Qy	1801	AAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAG 1
Qy	1861	rctgagccgtgccatcgargcccgcagcatrgatcagctgcgg 192/
Qy Dp	1921	ACCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGAGGATTTTGAGAAGAAGTAC 198
Oy Db	1981	GGAAGGTGGATCCCGGTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGC 204
Qy Db	2041	GCTTCTAATTTTCCCACACTCCACCTG

```
APPLICANT: TOMITINSON, James E.
APPLICANT: COR Therapoutics, Inc.
TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF A HUMAN ADENYLYL
TITLE OF INVENTION: CYCLASE
FILE REFERENCE: 44481-5028-01-US
CURRENT APPLICATION NUMBER: US/09/474,076
CURRENT FILING DATE: 1999-12-12
PRIOR FILING DATE: 1999-07-01
PRIOR PLICATION NUMBER: PCT/US98/13694
PRIOR FILING DATE: 1999-07-01
PRIOR PLICATION NUMBER: 06/070,904
PRIOR FILING DATE: 1997-07-01
PRIOR FILING DATE: 1997-07-01
NUMBER OF SEQ ID NOS: 2
SOFWARE: PALCHIN VET: 2.0
SEQ ID NO 1
LENGTH: 4942
                                                                              GTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTAC 3420
                                                                                                                                                   CAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTACTTC 3480
                                                                                                                                                                                         CTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGCCACAAATTCAGCTGAAGGGACCAAG 3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 GAACGCAAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC 180
                                                                                                                     1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAG
                                                                      CCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98.0%; Score 3478.4;
98.9%; Pred. No. 0;
iive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA ORGANISM: human type VI adenylyl cyclase
                                                                                                                                                                                                                                                                                                    ; Sequence 1, Application US/09474076
; Patent No. 6465237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 98.9
Matches 3513; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , LUCATION: (145)..(3648)
US-09-474-076-1
                                                                                                                                                                                                                                GIGGCACT 3549
                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                            NAME/KEY: CDS
                                                                                                                                                                                                                                                                                  RESULT 2
US-09-474-076-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                  3241
                                                                                                                                                                     3421
                                                                                                                                                                                                           3481
           3181
                              3241
                                                                     3301
                                                                                        3301
                                                                                                            3361
                                                                                                                               3361
                                                                                                                                                 3421
                                                                                                                                                                                        3481
                                                                                                                                                                                                                                3541
                                                                                                                                                                                                                                                    3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          265
                                                                                                                                                                g
                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                       δ
                                             g
                                                             δ
                                                                                 a
                                                                                                          P Q
                                                                                                                                            ò
                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οχ
                                                                                                                                                                                                                                                                                                                                                              2700
                                                                                                                                                                                                                                                                                                                                                                                  2700
                                                                                                                                                                                                                                                                                                                                                                                                       2760
                                                                                                                                                                                                                                                                                                                                                                                                                          2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3181 TACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTC 3240
                                                                                                                                                                                                                                                                                                                                                             CTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATG
                                                                                                                                                                                                                                                                                 ATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATC
                                                                                                                                                                                                                                                                                                                        TTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGAGTGCCTGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAG
 TCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACAT
                                                                              AGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATG
                                                                                                                    TTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCT
                                                                                                                                                           GCTGACATCACTGCCTGCACCTGCAGCTCAATTACTCTCTGGGGCCTGGATGCTCCC
                                                                                                                                                                                                  CTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCGCTTCCGGCAGCTGGAAAAAATCAAGACGATTGGTAGCACCTACATGGCTGCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGCTGAACGCCAACTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3061
                  2101
                                                                                                2221
                                                                                                                                      2281
                                                                                                                                                                              2341
                                                                                                                                                                                                  2401
                                                                                                                                                                                                                     2401
                                                                                                                                                                                                                                         2461
                                                                                                                                                                                                                                                             2461
                                                                                                                                                                                                                                                                               2521
                                                                                                                                                                                                                                                                                                                                          2581
                                                                                                                                                                                                                                                                                                                                                              2641
                                                                                                                                                                                                                                                                                                                                                                                  2641
                                                                                                                                                                                                                                                                                                                                                                                                                         2701
                                                                                                                                                                                                                                                                                                                                                                                                                                              2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3001
2101
                                      2161
                                                          2161
                                                                            2221
                                                                                                                    2281
                                                                                                                                                          2341
                                                                                                                                                                                                                                                                                                   2521
                                                                                                                                                                                                                                                                                                                       2581
                                                                                                                                                                                                                                                                                                                                                                                                      2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3121
               g
                                     δ
                                                    Q
                                                                      δ
                                                                                            Q
                                                                                                             5
6
                                                                                                                                                    P Q
                                                                                                                                                                                           ò
                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                        οŽ
                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

1;

Gaps 9 204

264

0 7	1403 GCCGACCA1 1378 GTACGTGAG 1525 GTACGTGAG	32 38	m in	ω <u>ι</u>	യഹ	1678 GAGGAGAAA 1825 GAGGAGAAG	1738 ATGCCGCGA 1885 ATGCCGCGC	1798 CAGATGGGC 1945 CAGATGGG	യ ഗ	8 CGGA 5 CGGA	e – e oo u	2038 IGCTICATC 	2098 TATGCCAGC 2245 TATGCCAGC	2158 GGTTCTCTG 	2218 CATAGCACC 	2278 ATGTTCACC 	2338 CCTGCTGAC
a 6 1	2 & A				δο QΩ	Qy Dp		QQ QQ				Qy Pp	Qy Dp	Qy	Qy	Qy	δλ
GTGCCCCTGGCAGGACGCCTTCATCCGGAGGGCGGCCCAGGCAAGGGCAAG 240			GCCTGACGCTGCTGGTGCGGTGCTGGTG 480	SCGCACCGGCCGCTCAGCCTAT 540	TCGTGGGGCTCATGGTGGTGTAACCGG 600	SIGAGIAACGIGGIGCTGCGGACTCCTGGCG 660	AACCCGCGCACCCTCTGGGGCCTCTGG 720	0 - 0		SCCAATGTGCTGTTCTCTGCACC 900	AAGTGTCTCAGCGCAGGCCTTTCAGGAG 960	TGCAGCATGAGAATCGGCAGCAGGAGCGG 1020 	CCATGGAGATGAAAGACATCAACAC 1080	п п	11	125	13
CCTCG	GAGCT	0-0		CTGCTCACAGGGGTGCTGCTGGCTTTCCAAGCCGCACCGGCCCGCCC		CATAGCTTCCGCCAGGACTCCATGTGGGTGAGTAACGTGGTGCTGGGCATCCTGGCG				GGTGATGCCTTCCTCTGGAAGCAGCTGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC	1 GTCATTAGCATCTGCACACTATCCAGCAGAGGTGTCTCAGGGCCAGGCCTTTCAGGAG	ACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGG					8 CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGG
Oy 181 Db 325 Qy 241	Db 385 Qy 301 Db 445	Qy 361 Db 505	Qy 421 Db 565	Qy 481 Db 625	0y 541 Db 685	Oy 601 Db 745	Qy 661 Db 805	Qy 721 Db 865	Qy 781 Db 925	Qy 841 Db 985	Oy 901 Db 1045	Qy 961 Db 1105	Qy 1021 Db 1165	Qy 1081 Db 1225	Qy 1138 Db 1285	119	Qy 1258

1377 1437 1977 2217 2397 1497 CCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACA 1557 CCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCG 1617 1764 1737 ATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC 1797 1944 2004 1917 2064 2037 2184 2097 2157 2304 2364 2277 2424 1644 CATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT 1857 CTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT GGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTG CGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGTGTGTCCAATGATGTGACC AGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG CCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGAGGATTTTGAGAAGAAG GITCCCIAAGGCCCTGCAACGICTGTCCCGCAGCAITGTCCGCTCACGGGCA ACATCACTGCCTGCCACCAGCAGCTCAATTACTCTCTGGGCCTGGATGCT ITGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG GAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTTGGTCTTC CATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT

Page

```
ADDRESSEE: Alan M. Gordon
ADDRESSEE: American Cyanamid Company
STREET: 1937 West Main Street,
STREET: P.O. Box 60
CITY: Stamford
STATE: Connecticut
                                                                                                                                                                                                                                                                                                                US/07/793,961A
                                                                                                          Sequence 1, Application US/07793961A Patent No. 5334521
                                                                                                                                                                                                                                                                                                                                                                                                                                                              4046 base pairs listed NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: GOLDO, Alan M.
REGISTRATION NUMBER: 30,637
REFERENCE/CDCKET NUMBER: 31,7
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203 321 2719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: IBM PC AT
                                                                                                                                                                                                                                                                                     OPERATING SYSTEM: MS-DOS
SOFTWARE: ASCII from DW4
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 4046 base pair:
                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US
FILING DATE: 19911118
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity 90.9
Matches 3229; Conservative
                                                                                                                                                                                                                                                                                                                         19911118
                                                                                                                                                                                                                                                                                                                                                                                                                           203 321 2971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                             AAGGTGGGCACT 3549
                                                               AAGGTGGGCATT 3696
                                                                                                                                                                                                                                                                              COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                  06904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                   US-07-793-961A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-07-793-961A-1
                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEX:
                                                              3685
           3478
                                             3538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248
                                                                                          RESULT 3
                           g
                                             δ
                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                       ****
                                                                                                                                                                                                      2757
                                                                                                                                                                                                                                       3057
                                                                                                                                                                                                                                                                                                                                                                                                                           3117
                           CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC 2877
                                                                                                                                                                                                                                                                                                                                                   2997
                                                                                                                                                                                                                                                                                                                                                           3177
                                                                                                                            ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC 2637
                                                                                                                                                                TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG 2697
                                                                                                                                                                                                                                                                                                                        GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC 3417
CCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT 2544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG 3297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC
                                                                                                                                                                                                                                                                                                                                                  ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCCATCGGGAACATG
                                                     CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC
                                                                                          ATGAICTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC
                                                                                                                                                                                                                                                                                                               GGTGCCGAGTGCCTGCGCTCCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCCGCTCCCCACATCACTGCCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACCAGCTGGAGTGTCGAGGGGTGAAGGTCAAGGGCAAGGGGGAGATGACCACCTAC
2485
                  2398
                                                                                                                            2578
                                                                                                                                                                                                                      2845
                                                                                                                                                                                                                                                         2905
                                                                                                                                                                                                                                                                                                                                3025
                                   2545
                                                     2458
                                                                      2605
                                                                                        2518
                                                                                                          2665
                                                                                                                                              2725
                                                                                                                                                                2638
                                                                                                                                                                                  2785
                                                                                                                                                                                                    2698
                                                                                                                                                                                                                                        2758
                                                                                                                                                                                                                                                                           2818
                                                                                                                                                                                                                                                                                             2962
                                                                                                                                                                                                                                                                                                              2878
                                                                                                                                                                                                                                                                                                                                                  2938
                                                                                                                                                                                                                                                                                                                                                                     3085
                                                                                                                                                                                                                                                                                                                                                                                       2998
                                                                                                                                                                                                                                                                                                                                                                                                        3145
                                                                                                                                                                                                                                                                                                                                                                                                                          3058
                                                                                                                                                                                                                                                                                                                                                                                                                                           3205
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3298
g
                                                                    g
                  δ
                                  g
                                                  QY
                                                                                       ŏ
                                                                                                      g
                                                                                                                       οy
                                                                                                                                           g
                                                                                                                                                                              셤
                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                          ₹ . q
                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                               ð
                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                    ζ
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                            δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

4; TICCTCAAIGGGGCCCCAGCAGIIAACAGGGCCCAGCCACAAAIICAGCIGAAGGGACC 3537 3625 TICCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGCCACCAAATTCAGCTGAAGGGACC 3684 61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120 247 Gaps 9 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT Length 4046 12; Indels APPLICANT: YOShihiro Ishikawa
TITLE OF INVENTION: Cloning and CharacterTITLE OF INVENTION: ization of a Cardiac Adenylyl
NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS: DB 1; 311; 84.3%; Score 2990.4; 90.9%; Pred. No. 0; ive 0; Mismatches

240 367 300 424 360 484 420 544	48 60 54 66 72	660 784 720 844 780	0 4 0 0	960 1084 1020 1144 1080	1137 1264 1197 1324 1257 1384
CCTCGGTGCCCTGGCAGGATGACGCCTTCATCCGGAGGGCCGGCC	CAGGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGGTIIIIIIIIII	CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAACGTGGTGGTGCTGGGCATC		GTCATTAGCATCTGCACACTATCCAGCAGAGGTGTCTCAGGGCCAGGCCTTTCAGGAG [1111 1111	AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC
181 241 368 301 425 485	421 545 481 605 541 665	601 725 661 785 721	4 8 0 4 9	901 1025 961 1085 1021 1145	1081 1205 1138 1265 1198 1325
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	oy oy ob	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

1444 1377 1437 1564 1497 1557 1617 1741 1677 1737 1861 1797 1857 1977 2037 2097 2157 2217 2341 2401 2397 1504 1624 1681 1921 1981 2101 2161 2162 TGCTTCATCTGCTTTATCCAGCTCCTCGTCTTCCCACACCTCAACGTGATGCTTGGGATC 2221 2281 CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAAC 2277 ATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA 2337 1445 GCAGACCATGCCCACTGGTGTGGAGTGGGGGTGGACGATGATGAGCGATGCATG 1438 CACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGGTGGTCCAATGATGTGACC 1738 ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC 1798 CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT 2042 CGGAAGGACCATGTGCGCCCCTTCCTGCTCCACAGAGGAGGATCTTGAAAAGAAG 2102 TACTCAAGGAAGGTGGACCCCCGCTTCGGAGCCTACGTGGCCCTGTGGTCTTC GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA 1378 GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGCGCGTG CCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT GCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCCATCTCGCTG 1678 GAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG 1922 CAGATGGGCATTGATGATGATCAGCAAAGACAACGGGGTGCCCCAAGATGCCCTGAACCC TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT TATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT 1565 1918 2098 2278 2038 2158 2218 2338 2402 Op Db Oy Db QV Db g οχ ద OY Db Qy Db δy Ω QQ Qy Dp Qy Db oy Db δ QQ Qy Db οy qq à D ρý g οy a ò

```
REGISTRATION NUMBER: 30,637
REGISTRATION NUMBER: 30,637
REFERENCE/DOCKET NUMBER: 31
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-831-3244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 201-831-3305
INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 84.3%;
Best Local Similarity 90.9%;
Matches 3229; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 4046 base pairs
                                                                                                                                                                                                                             JOSEE: American Cy
T: One Cyanamid P
Wayne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid
                                                                                                                                                                                                               NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: American (
STREET: One Cyanamid
                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floner
                                                                         AAGGTGGGCATT 3673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           131..3625
                                                            AAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                             New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                 ZIP: 07470-8426
                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; LOCATION:
US-08-240-357-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                US-08-240-357-1
                                                                                                                                                                                                                                                                           STATE:
             3478
                                                           3538
                                                                                 3662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                  g
                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
             ò
                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                               2757
                                                                                                                                                                                                                                                                                                                                                           2877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC 3117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT 3177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT 3237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3542 TACCAGCTGGAGTGTCGAGGGGGGGGGGGGAGGGGGAGGGGGAGATGACCACCTAC 3601
                                  CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT
                                                                                                                                                                                TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG
                                                                                                                                                                                                                                                               ATTCTGCTGGTGTTTGCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC
                                                                                                                                                                                                                                                                           CGCCTAAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAAGGAGGAGATGGAGGAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                       CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG
                                                                                                                                                                  ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC
                                                                                                                                                                                                                                                                                                                                                                                 2942 CAGGCCTACAACCGAAGGCTGCTGCATAACATTCTGCCTAAGGACGTGGCTGCCCACTTC
                                                                                                                                                                                                                                                                                                                                                                                                       CTGGCCCGGGAGCGCCGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGITTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3418 TACCAGCTGGAGTGTCGAGGGTGGTCAAGGTGAAGGGGAAAGGGGGAGATGACCAACTAC
                                                                      CTGCTGAGTCTCTTGGCCAGCTCTGTTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC
                                                                                                                   ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACG
                                             2522
                                                                     2458
                                                                                                                                           2642
                                                                                                                                                                  2578
                                                                                                                                                                                       2702
                                                                                                                                                                                                                                                             2698
                                                                                                                                                                                                                                                                                                                                                          2818
                                                                                                                                                                                                                                                                                                                                                                                                       2878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3302 (
                                                                                                                   2518
                                                                                                                                                                                                                                                                                                            2758
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3298
 2462
                                                                                                                                                                                                                 2638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3358
셤
                                             g
                                                                                       g
                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                       ŏ
                                                                   δ
                                                                                                                  ò
                                                                                                                                      Ω
                                                                                                                                                                οy
                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
```

```
4
TICCICAAIGGGGCCCCCAGCAGIIAACAGGGCCCAGGCCACAAAIICAGCIGAAGGGACC 3537
                     3602 TICCTCAATGGGGGCCCCCCCAGTTAGCAGAGCCCAGCTACAAGTTCAGCTGTCAGGACC 3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          108 CCTCGGTGCCCCTGGCATGAGGCCTTCATCCGGAGGGGGGCGCCCGGGCAAGGGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248 CCCCGCTATATGAGCTGCCTCCGGGATGCGCAGCCCCCCAGTCCCACCCCTGCGGGCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 4046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                      APPLICANT: Ishikawa, Yoshihiro
TITLE OF INVENTION: Cloning and Characterization
TITLE OF INVENTION: Cardiac Adenylyl Cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PATENTIN Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/240,357
FILING DATE: 10-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    311;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 2990.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                  Cyanamid Company
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                            Sequence 1, Application US/08240357
Patent No. 5578481
GENERAL INFORMATION:
```

us-09-750-240-5.rni

œ

Qy Db	241 G 1 368 G	GAGCTGGGGCTGCGGCAGTGGCCTTGGAGGATACCGAGGTGACAACGACAGCG	300
oy Op	301 G 425 G	GGCGGACGGCTGAGGTGGCCCCGACGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC	360
Oy Dp	361 C	AGGTGTTCCAGTCGAAG	420
Oy Db	21	GGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGT 	480
Qy Dp	481 C	AGCGCACCGCCCGCCTCAGCCTGCC 	540
Oy Op	541 G 665 G	GTGGCACTGTTGGCCTGTGCCGCCCTGTTGGTGGGGCTCATGGTGGTGTGTAACCGG 	600
Oy Dp	601 G	CATAGCTICCGCCAGGACICCAIGIGGGGGGGGAACGIGGIGGIGCIGGGCAICCIGGCG 	
Qy Db	661 G 1 785 G	GCAGTGCAGGTCGGGGCGCTTTCGCAGCACCCGCGCAGCCCCTCTGCGGGCCTCTGG	720
o o	721 T 	TGCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC [780
O.y D.b	781 G 905 G	GTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT 	840 964
Oy Db	841 G	GCTCGGTGCCAATGT 	900
Oy Db	901 G	CACACTATCCAGCA acacactacccagct	960 1084
Qy Db	961 A 1085 A	ACCGCAGTTACATCCAGGCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGGGGGGG	1020
Qy Db	1021 C	CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCATGGAGATGAAGAAGAACATCAACACA 	1080
Oy Db	1081 A 1 1205 A	AAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 	1137
Qy Db	1138 C 1 1265 C	CTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTG	1197
Qy Dp	1198 G 1325 G	STCATGACCCTGAATGAGCTCTTTGCCGGTTTGACAAGCTGGCTG	1257
Oy Dp	1258 C 1385 C	CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCTCAGGGCTGCCGGAGGCCCGG 	1317

1617 1504 1497 1677 1857 2097 2457 1437 1624 1557 1801 1737 1861 1797 1921 1917 2041 1977 2037 2157 2281 2217 2341 2277 2401 2337 2461 2397 2521 1564 1681 1981 2101 2161 2221 GCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG 1377 CTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACA GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG CGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGGAGGATTTTGAGAAGAAG ATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGCCGCGTG CTGCAGTACCTGAACGGGGACTACGAGGTGGAGCCGGGCCGCGCGGTGGCGGAGCGCG GAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT TATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTTACTTCTGCCATTGCCAAC CCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT 1978 1862 1982 1318 1445 1378 1438 1565 1625 1558 1682 1802 1798 1858 1918 2042 2102 2098 2282 2278 1505 1498 1678 1738 1922 2158 2218 2342 2402 2338 2462 2398 qq qq 07 07 δy g Qy Db Q D δy qq Oy Oy Db Qy qq δy QQ δy qq Qy qq qq οy g g Op ò δy οy δy Qγ ά

```
3602 TICCTCAATGGGGGCCCCCCAGTTAGCAGAGCCCAGCTACAAGTTCAGCTGTCAGGACC 3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                      APPLICANT: Tang, Wei-Jen
APPLICANT: Tang, Mei-Jen
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER FALABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: FLOPPY disk
COMPUTER: TBM PC compatible
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/726,214
FILING DATE: CONCURTENTLY HERWITH
CLASSIFICATION: 435
PRIOR APPLICATION WHERE: US 60/005,498
FILING DATE: 04-OCT-1995
ATORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     463;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 2751.2;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                       UTSD:450
                                                                                                                                                                                                                                                        COUNTRY: United States of America ZIP: 77210
                                                                                                                                                                                                            Durkee
                                                                                                    Sequence 11, Application US/08726214
Fatent NO. 6107076
Fatent NO. 6107076
FAPLICANT: Tang, Wei-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: AND USES THEREE
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Highlander, Steven L. REGISTRATION NUMBER: 37,642 REFERENCE/DOCKET NUMBER: UTF TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: (512) 418-3000
TELEFAX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 4131 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White &
STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77.5%;
86.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                      3538 AAGGTGGGCACT 3549
                                               3673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                      AAGGTGGGCATT
                                                                                                                                                                                                                                   Houston
                                                                                                                                                                                                                                  CITY: Houston STATE: Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Simi
Matches 3080;
                                                                               RESULT 5
US-08-726-214-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-726-214-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                               3662
                      δλ
                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                GGTGCCGAGTGCCTGCTGGTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC 3057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC 3117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC 3417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGCCAAGGGGGAATGACCACCTAC 3477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCCTCAATGGGGGCCCCCAGCAGTTAACAGGGCCCCAGCCACAAATTCAGCTGAAGGGACC 3537
                                                                                                                                                                                                                                                                                                                                                                                                          ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGGCTGGAGGCAAACAATGAG 2997
                                                                                                                                                                                                                                  CTGCTGAGTCTCTTGGCCAGCTCTGTTTTCCTGCACATCAGTAGCATCGGGAAGTTGGCC
                                                                                          TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG
                                                                                                                                                                                     ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC
                                                                                                                                                                                                                      ATTCTGCTGGTGTTTGCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCCACATCACTGCCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACG
                                                                              ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC
                                                                                                                                                                                                                                                                                                               CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCCACTTC
                                                                                                                                                                                                                                                                                                                                                            CIGGCCCGGGAGCGCCGCAATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3298
          2522
                                 2458
                                                       2582
                                                                              2518
                                                                                                     2642
                                                                                                                            2578
                                                                                                                                                  2702
                                                                                                                                                                        2638
                                                                                                                                                                                               2762
                                                                                                                                                                                                                      2698
                                                                                                                                                                                                                                          2822
                                                                                                                                                                                                                                                                  2758
                                                                                                                                                                                                                                                                                        2882
                                                                                                                                                                                                                                                                                                              2818
                                                                                                                                                                                                                                                                                                                                    2942
                                                                                                                                                                                                                                                                                                                                                            2878
                                                                                                                                                                                                                                                                                                                                                                                 3002
                                                                                                                                                                                                                                                                                                                                                                                                         2938
                                                                                                                                                                                                                                                                                                                                                                                                                               3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3478
          g
                                                      g
                                                                                               q
                                                                                                                          δ
                                                                                                                                                                                          g
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                 δ
                                                                             ò
                                                                                                                                               a
                                                                                                                                                                     ò
                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
```

240 121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCCTGCGGGGCCCC 180 232 56 ATGTCATGGTTTAGCGGCCTCCTGGTTCCCAAAGTGGATGAACGGAAAAACAGCCTGGGGC 115 GAACGCAATGGGCAGAAGCGTTCGCGGCGCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120 GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG 300 Gaps 181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGCCGCCCAGGCAAGGGCAAG 1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT Length 4131; 11;

349 360 409 420 469 480		2 6 8 6 4 8	900 949 960 1009 1020	13 13 19 19 24	30 31 37 42
GAGCTGGGGCTGCGGTCAGTGGCTTTGATGACACTGAGGTGACCACCGGGGCGACTGGGGCGACTGGGGTGACCACCCGGGGGGACTGGGGTGTTTGATGACACTGAGGTGACCACCGGGGGGACTGGGGGGGTGTTTTTTTTTGATGACTGGGGGGGTGTCTGCTGGGGGGGG	CTGCTCACAGCGGTGCTGCTGCTGCTCCAAGCCGCACCCGCCCG			TGCTGCTGCTCGGTATTGCCCCAGCACGTTGCCATGGAGAAGAAGAAGAACATCAACAC 	TCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGGGGGAAATCACTG IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
293 301 350 361 410 470	530 541 590 601 650	661 710 721 770 781 830	841 890 901 950 961	21 70 81 38	98 50 10 70
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

1730 GAGGAGAAGGCCATGCTGGTCAAGCTGCAGGGACGCGGGCCAACTCCATGGAAGGACGACG ATGITCACCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATITAACA GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCCATCCACAGCGGGCGCGTG GAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC CAGATGGGCATTGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG TACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTGGTCTTC TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATT TATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGT GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA ATGTTCACCTGCAGTCACCCCCACTGAGGACCTGTGCGGCCCGGATGCTGAACTTAACA CCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCT CCCCTGTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG CACTGCGGCGTCCTTGGCGAAATGGCAGTTCGATGTGGGTCCAATGATGTGACC δy g Ω q QY DP OY DP QQ Dp oy Db Qy Db 90 OX Qy Db Oy Db Ωp ογ qq οy g QY Db δ g ò Db

ò Dp à 셤 ð 8 g

à

g

ò

8 δ g à q δ 8 οy g

ά

```
815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTGTATACATCGCATACACGCT 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123 CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCTCCACCTTGCATTT 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 TAACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGGCCTCCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1812;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                       APPLICANT: Hammond, H. Kirk
APPLICANT: Hammond, H. Kirk
APPLICANT: Insel, Paul A.
APPLICANT: Drig, Peabei
APPLICANT: Post, Steven R.
APPLICANT: Gao, Methua
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE
TITLE OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON & FOERSTER
STREET: 755 PAGE MILL ROAD
CITY: PALO ALTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1808.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22000-20567.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/09/008,097 FILING DATE:
                                                                             US-09-008-097-3; Sequence 3, Application US/09008097; Patent No. 6306830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: Dylan, Tyler M
REGISTRATION NUMBER: 37,612
REFERENCE/DOCKET NUMBER: 2200
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-813-5600
TELEFRAX: 650-494-0792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAA: COGTA1
TELEX: 706141
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 1812 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: Coding Sequence
; LOCATION: 1...1812
; OTHER INFORMATION:
US-09-008-097-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51.0%;
99.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                        IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 99.9
Matches 1809; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                          Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
             CCAAGGTGGGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                     94304-1018
                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                      STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
               3590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      95/
                                                              RESULT 6
                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                            3117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC 2877
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCCCGGGAGCGCCCCATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTT 2937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGGCTGGAGGCAAACAATGAG 2997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCGGGCTAAATGCCAGCACCTATGACCAGGTCGGCCGCTCGCACATCACCGCCCTGGCA 3229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAAGGAGGAGATGGAGGGGTA 2817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC 3057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC 2517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACG 3357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTGAGTCTCTTGGCCAGCTCCTCCTCCACATCAGCAGCATGGCAAGCTAGTT
                                                                             TTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                              ATGATCTTTGTCTTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC
                                                                                                                             ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC
                                                                                                                                                                                           TITGATGGGCTGGACTGTCCAGCTGCAGGGGGGGGCCCCTCAAATATATGACCCCTGTG
                                                                                                                                                                                                                                                          ATTCTGCTGGTGTTTGCGCTGGCGCTGTATCTGCATGCTCAGGTGGAATCGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGAGCGCTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ITCCTCAATGGGGGCCCCCAGCAGTTAACAGGGCCCCA - - GCCACAAATTCAGCTGAAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACCAGCTGGAGTGTCGAGGGGTGGTGAAGGGGCAAGGGGGAGATGACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3536 CCAAGGTGGGCACT 3549
2458
                                                                                           2570
                                                                                                                           2578
                                                                                                                                                           2630
                                                                                                                                                                                           2638
                                                                                                                                                                                                                        2690
                                                                                                                                                                                                                                                        2698
                                                                                                                                                                                                                                                                                       2750
                                                                                                                                                                                                                                                                                                                                                      2810
                                                                                                                                                                                                                                                                                                                                                                                       2818
                                                                                                                                                                                                                                                                                                                                                                                                                      2870
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3530
                                                              2518
                                                                                                                                                                                                                                                                                                                       2758
```

q

ò

셤

ζ

9

ò

a

à

8

δ

g

δ q à g δ

ò

ö

695

us-09-750-240-5.rni

Db 1263 Tr Qy 1956 G Db 1323 G Qy 2016 Tr Db 1383 Tr Qy 2076 Cr Oy 2076 Cr	Oy 2136 G Db 1503 G Oy 2196 C Db 1563 C Oy 2256 G	1623 2316 1683 2376 1743	SULT 7 -09-473- Sequence Patent N GENERAL APPLICA	TITLE OF CURRENT CURRENT CURRENT PRIOR API PRIOR FII PRIOR FII PRIOR FII PRIOR FII PRIOR FII	; SOFTWARE ; SOFTWARE ; CENGTH: ; TYPE: DI ; ORGANIS ; FEATURE ; LOCATIOI US-09-473-7; Query Matc Best Loca. Matches 2:
					
A 242 T 935 T 302 A 995 A 362 T 1055	r 422 A 1115 A 482 C 1175 C 542	A 1235 A 602 T 1295 I 662 A 1355 A 722	1 1415 1 782 1 782 A 1475 A 842 G 1535 G 902	3 1595 3 962 1 1655 1 1022 3 1715 3 1082	2 1775 2 1142 3 1835 3 1202 8 1262 A 1955
	CAGCACGTTGCCA TAGATCTACATAC THILLIII TAGATCTACATAC TAGATCT	GCCCGGTTTGACA - - - - - - - - - - - -	GTGAACATGCGCG' GTGALITITITG GAATGGCAGTTCG RAATGGCAGTTCG RAATGGCAGTTCG GAACCGGCCGCCCCCCCCCCCCCCCCC	GAAGTGGAGCCAG [111][1][1][1] [GATTTCCTCATCC [1][1][1][1][1] [CTTTCCTCATCC [CTGCAGCGACTC] [CTGCAGCGACTC] [CTGCAGCGACTC] [CTGCAGCGACTC] [CTGCAGCGGACTC] [CTGCAGCGGACTC]	GCCTTCTCCCGGA
	IGTCGGTATTGCCC AAGACATGTTCCAC AAGACATGTTCCAC ACATTGAGGCTTC ACATTGAGGCTTC ACATTGAGGCTTC	rdaatgagctcttt 	rdacaggtgtgaar 	reaacgegacrac 	SGGTTCCTGATCGT
	AGCGGCTGCTGCT ACACAAAAAAGA ACACAAAAAAAGA TCCTGTTTGCAGA	TGGTCATGACCCT 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	TGGTACGTGAGGT 	CACTGCAGTACCT (CATTCTTTTTTTTTTTTTTTTTTTTTTTTTTTT	TGATGCCGCGATC
	GCATGAGAATCGGCAGCAGGAGCGGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT GGAGATGAAAGAAGAACACAAAAAAAAGAAGACATTGCCAAGGACGTTGCCAT GGAGATGAAAGAAGAACATCAACACAAAAAAAGAAGACATGTTCCACAAGATCTACATACA	CCAGTGCACTGCCGAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCGGTTTGACAA	CATGATTGAGGCCATCTGGCTGGGAGGTGACAGGTGTGAATGTGAACATGCGCGT	CATCCACATCACTGGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGG [GGCCAACTCCATGGAAGGCTGATGCCGCATGGGTTCCTGATCGTGCCTTCTCCCGGAC
		1176 543 1236 603 1296	1356 723 1416 783 1476 843	1536 903 1596 963 1656 1023	1716 1083 1776 1143 1836 1203
90 OX OX OX		6 6 6 6 6	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6

```
LICANT: Tomilinson, James
LICANT: Tomilinson, James
LICANT: Tomilinson, James
LICANT: Cor Therapeutics, Inc.
LE OF INVENTION: CLOUNING AND CHARACTERIZATION OF A HUMAN ADENYLYL
LE OF INVENTION: CYCLASE
E REFERENCE: 44481-5027-01-US
REBWY APPLICATION NUMBER: US/09/473,716
REBWY PFILING DATE: 1999-12-03
DR APPLICATION NUMBER: PCT/US98/13540
DR FILING DATE: 1999-07-01
DR APPLICATION NUMBER: 60/070,901
DR FILING DATE: 1997-07-01
DR APPLICATION NUMBER: 08/886,362
DR APPLICATION NUMBER: 09/070,01
DR FILING DATE: 1997-07-01
DR FILING DATE: 1997-07-01
BER OF SEQ ID NOS: 2
FWARE: PATCHIN Ver. 2.0
                                                                                                                                                                                                                                                             2075
                                                                                                                                                                                                                                                                                                                                                                                                                                       2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCA 1322
                                                                                                                                                                                                                                                                                                      SITTACTICIGCCATIGCCAACAIGTICACCIGIAACCACACCCCCAIACGGAGCIGIGC 2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                              reccrerecterrestraterectrestreserreserresectres and reserve and re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ?TCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 4; Length 4523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  911;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1703.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SM: human type V adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1, Application US/09473716 o. 6436672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tch 48.0%;
al Similarity 71.3%;
2356; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ON: (139)..(3921)
716-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IGAGGTGTCC 2445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EY: CDS
ON: (139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0 1 4523
```

7;

DGGAGGGGCGGCCCAGGCAAGGCAAGGAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTC 273

684	333	393 801	453	513 921	573 981	633 1041	693 1101	753	813 1221	873 1281	933 1341	993	1053	1110	1170	1230	1290	1350
	274 GAGGATACCGAGGTGACAACGACAGCGGGGGGGGGCTGAGGTGGCGCCCGACGGGTG	334 CCCAGGAGTGGGCGATCCTGGCGCCGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTC	394 CGTTCGGCCAAGCTGGAGCGCCTGTACCAGCGGTACTTTTTCCAGATGAACCAGAGCAGC	454 CTGACGCTGCTGGTGCTGGTGCTGCTCACAGCGGTGCTGCTGCTTTCCAAGCC II I	514 GCACCGCCCGCCCTCAGCCTGCCTATGTGGCATGTTGGCCTGTGCCGCCGCTGTTC	574 GIGGGGCTCAIGGIGGIGGIGGGCAIAGCTICCGCCAGGACTCCAIGIGGGGGGGGGG	634 AGTAACGTGGTGGTGGCATCCTGGCGGCAGTGCAGGGGGGGG	694 CCGCGCAGCCCTCTGCGGGCCTCTGGTGCCTTGTTTGTATACATCGGTACACG	754 CTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGGGCCTGGGCCTCTCCACCTTGCAT	814 TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCCTTTTTTTT	874 AATGIGCTGCTGCTCTCTGCACCACGACGTCATTAGCATCTGCACACTATCCAGCAGAG	934 GTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACTG	994 CAGCATGAGAATCGGCAGCAGCAGCTGCTGCTGGTCGGTATTGCCCCAGCACGTTGCC	1054 ATGGAGATGAAAGACATCAACACAAAAAAAGAGCATGTTCCACAAGATCTAC 	1111 ATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGAGCATTGAGGGCTTCACCAGGCTG	1171 GCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTT	1231 GACAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTAC	1291 TGTGTGTCAGGCCTGCCGGGCCGGCCGACCATGCCCACTGTGTGGAGATGGGG
qq	Qy Dp	Oy Dp	Qy Dp	Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	QY Dp	QV Dp	Qy Dp	QY Db	Qy Db	QY	QY	Oy Db	Qy	Οy

1470 1650 1998 2415 2118 2358 2121 2241 2295 CTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGG 1938 2775 2412 1711 ACTCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCC 1770 -------CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGCCATTGATGATTCC 1818 1819 AGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTC 1878 CTGCTAATCACCGTGCTGATCTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCC 2178 CTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATC 2238 TITICCGICCIGCITGIGITIACTICIGCCATIGCCAACAIGITCACCIGIAACCACAC 2298 2835 GGCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGGACTACGAAGTGGAG 1590 ATCCTGGGGGCAGCCAGAAAAGGAAAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGG 1710 1702 TGCGTCTCGGGGCTGCCTGAAGCAAGGGCTGACCACGCCCACTGCTGTGTGGAGATGGGC 1761 CAGAGAACCAACTCCATCGGGCACAACCCACCACCACTGGGGGGCTGAGCGCCCCTTCTAC 2296 CTGGGCCGTGCCATTGACGCCAGGAGCATTGATAGGCTTCGGTCTGAGCACGTCCGCAAG CCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTC AACCACCTGGGTGGCAACCAGGTGTCCAAGGAGATGAAGCGGGTGGGCTTTGAAGACCCC A -----AGGACAAGAACGCCCAGGAGAGTGCGAACCCTGAGGATGAAGTGGATGAGTTT 2059 CTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTG ATCACCATCGTGCCCCACTCCATATTCATGCTCAGCTTCTACCTGACCTGTTCCCTGCTG CTGCAGACCCTCTCCAGGAAGATGTGCTGCGGTCCAAGATGAACAGCACCCTGGTTGGGGTG CACGTGGCGGAGTCGGCCGTCAACTACAGCCTGGGCGATGAGCAGGGCTTCTGTGGCCAGC CGCGTGGGCATCCACAGGGGGGGGGGGGGTGCTGGGGGTCCTTGGCTTGCGGAAATGGCAG TTTTTGCTCACCTTCCAGAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCC 1999 CGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAG 2716 GACCTGCTGGCTGCTTGGCACAGGAGCACATCAGCGCGGGCCAGGTCAACGTGT CACCTGCAGCAG-----CTCAATTACTCTGGGCCTGGATGCTCCCCTGTGTGAGGGC 2476 1351 1762 1411 1822 1471 1882 1531 1942 1591 2002 1651 2062 2122 1771 2182 2242 1879 1939 2356 2416 2119 2536 2179 2596 2239 2656 2299 2776 ŏ 9 9 9 9 9 Q D δ O D οy g δy Op δy OD g Dp g óλ Q Óγ

à g à

ð

à

ò

ŏ

à

ò

ò QQ ογ δλ

ò

à

ò a Q

õ

셤

δ

qq

```
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEPAX: (512) 418-3000
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
                                                                                                        Sequence 9, Application US/08726214
Patent No. 6107076
                                                                                                                                                                                                                                                                                                              COUNTRY: United States of ZIP: 77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 3924 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 71.4
Matches 2265; Conservative
                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM
                                                                                                                                                                                                                                                                                  Houston
3493 CCC 3495
                             3910 CCC 3912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-726-214-9
                                                                                                                                                                                                                                                                                                 STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            308
                           g
õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                              2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3432
                                                                                      2896 GCCTGCTCCTGCTGCTGCAGATCAGCTCGGGAAGCTGGTGCTCATGCTGGCCATC 2955
                                                                                                                                                    2956 GAGCTCATCTA---CGTGCTCATCGTGGAGGTGCCAGGTGTCACGCTCTTCGACAACGCC 3012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3310 CGCAATGAFGAGCTCTACTATCAGTCCTGTGAGTGTGTGGCGGTCATGTTCGCCTCCATC 3369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3192
                                                                                                                                                                                                                                                                                                                                                                                                                                                  2836 CCCTGGCCCAACTGCAACTTCCCCGAGTACTTCACCTACAGCGTGCTGCTGAGCCTGCTG
                                                                                                                                                                                                                    3013 GACCTGGTCACCGCCAACGCCATAGACTTCTTCA---ACAACGGGACCTCCCAGTGC
                                                                                                                                                                                                                                                                               3130 GIGCTGGCCCTGTACCTGCACGCCCAGGAGGTGGAGTCCACTGCCCGCCTCGACTTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                       3430 CGGCTACTCAATGAGATCATCGCTGACTTTGATGAGAGATCATCAGCGAGGATCGGTTCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3133 AGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3550 TCTACCTACGACAAGGTGGGCAAGACCCACATCAAGGCACTGGCCGACTTGCCATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCATGGAGCAGATGAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3610 CTGATGGACCAGATGAAGTACATGAGCACTCCTTCAACATTCCAGATGAAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTG
                                                                       GCCAGCTCTGTCTTCCTGCACATCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTG
                                                                                                                                     GGGCTCATCTATTTGGTGCTGCTTCTGGGTCCCCCAGCCGCCATCTTTGACAACTAT
                                                                                                                                                                                                  GACCTACTGCTTGGCGTCCATGGCTTGGTTCTTCCAATGAGACCTTTGATGGGCTGGAC
                                                                                                                                                                                                                                                                                                                           2713 GCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTC
                                                                                                                                                                                                                                                                                                                                                                                       2773 TGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGGCGTGTTATGTTTGCCTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2953 GCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3013 CGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGAC
                                                                                                                                                                                                                                                                2653 TGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTT
             2413
                                                                       2473
                                                                                                                                    2533
                                                                                                                                                                                                  2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3433
                                        셤
                                                                       δ. q
                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
```

```
427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             345 GCGATCCTGCTGGCGCCGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAA 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGGAGCGCCTGTACCAGCGGTACTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            188 ACTGGAGCGTCTGTACCAGCGCTATTCTTCCGCCTGAACCAGAGCAGCACCTCACCATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCCTCAGCCTGCCTATGTGGCACTGTTGGCCTGTGCCGCCGCCCTGTTCGTGGGGGCTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             368 TGTGCTCTGCAACCGTGCAGCCTTCCACCAGGACCACATGGGCCTGGCTGCTATGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 3; Length 3924;
                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFWRARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: CONCULTENTLY HEREWITH
CLASSIFICATION: 435
                                                                                     ADENYLYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.4%; Score 1648.2; 71.4%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Tang, Wel-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN
TITLE OF INVENTION: AND USES THEREFOR
                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-0CT-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                               America
```

; 9

704	764	824	884	944	1004	1064 847	1121 907	1181	1241	1301	1361	1421	1481	1541	1601	1661	1721	77
GCTGGGCATCCTGGCGGCAGTCGGGGGCGCTTTCGCAGCAGACCCGCGCAGCCCCTTTCGCAGAGCCCGCGCAGCCCCCCCC	CTCTGCGGGCCTCTGGTGCTCTTTGTATACATGCATACACGCTCCTCCCCAT	CCGCATGCGGGCTGCCGTCCTCAGCGGCCTCTCCACCTTGCATTTGATCTTGGC	CTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCT	GTTCCTCTGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCA 	CCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCGGCTCCACCTGCAGCATGAGAA	TCGGCAGCAGGAGCGGCTGCTGCTGTGCCCCAGCACGTTGCCCAGCACGTTGCCATGAGAGATGAA	AGAAGACATCAACAAAAAAAAAAGACATGTTCCACAAGATCTACATACAGAAGCA 	TGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTG 	CACTGCGCAGGAGCTGGTCATGACCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGC	TGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGG 	GCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGAT	TGAGGCCATCTCGCTGGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCAT 	CCACAGGGGGGGGGGGGCGTGCTTGGCTTGGGAAATGGCAGTTCGATGTGTG	GTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCGGGGTGGCGGCATCCA 	CATCACTCGGCAACACTGCAGTACCTGAACGGGACTACGAAGTGGAGCCAGGCCGTGG 		CAGCCAGAAACGGAAAGGGGGGGATGCTGGCCAAGCTGCAGGGCTCGGGCCAA 	
645	705	765	825	888	945	1005	1065	1122	1182 968	1242	1302	1362	1422	1482	1542	1602	1662	7
Qy Db	Qy	Q Dp	Qy	QY	QQ QD	Oy Db	Qy Dp	Qy Dp	Qy Dp	Qy Dp	Qy	QQ qq	Qy	Qy	Qy Db	Qy Db	Qy	QY

2009 2069 2129 2249 2041 2309 2369 2483 2543 2455 2515 2783 2101 2423 2341 2603 2398 2663 2161 2281 GGCAACAGGGGAAAAAGGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCA 2843 CAAGAATGCCCAGGAAAGTGCCAACCCTGAGGATGAAGTGGACGAGTTTCTGGGTCGAGC CCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCAC CCTGGTGTTCCTCTCGGCTTTTGTCAACATGTTCATGTGCAACTCTAAGAACCTGGTGGG G-----CTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCAC -CGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCCATTGATGCTTCCAGCAAAGACAA CTACGTTGCCTGTGCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTT GTCCCGCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCT GTCGGCCTTCAACTACAGCCTGGGCGACGAGGGCTTCTGTGGCAGCCCCCAGTCCAA CTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGGCTCATCTA TTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCT 2399 CACCGCCAATGCCATAG --- ACTTCAGCAACAACGGGACCTCCCAGTGCCTGAGCATGC CCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGC CATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCAC CTTCCAGAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGC CGTGCTGATCTGTGCTGTGCTCTCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCT GCTTGTGTTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAG CTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGT AGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCCTGGCGCT GTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACA TGGCGTCCATGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGC 2010 2070 2130 1508 1771 1622 1890 1682 1950 1742 1802 1862 1922 2190 2042 2102 2370 2162 2424 2222 2484 2282 2544 2342 2604 2664 2456 2724 2784 QQ a 9 6 6 6 oy Oy g οy g S D Oy Q D g QY a δ g Op q g q ò δ δ δ οý δ οχ ŏ ŏ

13;

84

us-09-750-240-5.rni

```
387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         205 CTGCGGGCGTGCGATGAGGAGTTCGCGTGCCCGAGCTGGAGGCGCTGTTCCGCGGCTAC 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               153 GCCACCCAGCCCCACCCCTGCGGGCCCCCTCGGTGCCCCTGGCAGGATGACGCCTTCAT 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    265 ACGCTGCGGCTGGAGCAGGCGGCGACGCTGAAGGCGCTGGCCGTGCTCAGCCTGCTGGCG 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTGCTCCTCACACGGGGTGCTGCTGGTTTC 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTTCGCAGCAGACCCGCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTCTTTGTA 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          679 GIGGCCGCCICGCACTIGCTGGICACGGCTACGTIGGICCCCGCCAAGCGCCCACGICTC 738
                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGGAGGGGCGCCCCAGGCAAGGGAGCTGCGGGCTGCGGGCAGTGGCCCTGGGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCAGGAG - - - - TGGGCGATCCTGCTGGCGCCGTTTGGTGCAGGTGTTCCAGTCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        568 CTGTTCGTGGGGCTCATGGTGTGTGTAACCGGCA-----TAGCTTCCGCCAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             619 TCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCGGCGAGTGCAGGTCGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   273 CGAGGATACCGAGGTGACAACGACAGCGGGGGGGGCGGCTGAGGTGGCGCCCGGACGCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGCCGCACCCGCCCCCTCAGCCTGCCTATGTGGCACTGTTGGCCTGTGCCGCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----GGCAGCGGTGCCGGCGACAGCCGATCAGGGAGTCTGGCAGCTCCTTTTGGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGTICCGTICGGCCAAGCTGGAGCGCCTGTACCAGCGGTACTTTTCCAGATGAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCTCGCACCCCGTGCACTGCGTGCTCCTGGCGCTGCTCGTGGTCACCAACGTCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCTCCACCTTGCATT - - - TGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTC
                                                                                                                                                                                                                                                                                                                                                        Indels 134;
                                                                                                                                                                                                                                                                                                                     Length 3978;
                                                                                                                                                                                                                                                                                                                     Score 595; DB 3; I
Pred. No. 9.3e-138;
0; Mismatches 1485;
                                         FILING DATE: U4-CUT-1935

ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REGISTRATION NUMBER: UTSD:406
FELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 414-7577
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 3978 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                    60/005,498
                                                                                                                                                                                                                                                                                                                    vuery Match 16.8%;
Best Local Similarity 51.9%;
Matches 1750; Conservative
 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 66
FILING DATE: 04-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 448
                                                                                                                                                                                                                                                                                                                                                                                                                                                              213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           856
                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                2636 CAACATTCTGCCCAAGGACGTGCCCACTTCCTGGCCGGGAGCGGCGCATGATGA 2695
                                                                                                                           2936 CAAGGCAGGCAAGACCCACATCAAGGCTCTTCGCCATGAAGCTGAAGGCACA 2995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1116 TACAGTAAATGTGGCCAGCCGTATGGACAGCACTGGGGTGCCTGACCGCATCCAGGTTAC 3175
2576 GGCCACAGAAGAAGGAGGAGATGGAGGAGCTGCAGGCCTACAACCGGCGCTTGCTGCA 2635
                                                                                                                                                                                                                                                3024 CGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAA 3083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3264 GGGCCCAGTCGTGCCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAA 3323
                                                                                                                                                                           TGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAA
                                                                                                                                                                                                                                                                 3144 TCAGGTGGGCCGCTCCCACATCACTGCCTGGCTGACTACGCCATGCGGCTCATGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2904 ACTCTACTATCAGTCGTGTGAGTGTGTGTGTTATGTTTGCCTCCATTGCCAACTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          3204 GATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGGCTGAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3384 CACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGGGGGTGGT
                                  2844 TAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3236 CAAGGTCAAGGCCAAGGGTGAGATGATGATGATTTCTTCTCAATGGAGGCC 3286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3444 CAAGGTGAAGGGCAAGGGGGAGATGACCACCTACTTCCTCAATGGGGGCCC 3494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Tang, Wei-Jen
APPLICANT: Tang, Wei-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSE: Arrold, White & Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: P.C. CITY: Houston STATE: Texas COUNTRY: United States of America 77P: 77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/726,214 FILING DATE: Concurrently Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3: Arnold, White & Durkee P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/08726214 Patent No. 6107076 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
US-08-726-214-1
                                                                                                                                                                           2964
g
                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                               음
                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                    à
                                                                   8
                                                                                                    ò
                                                                                                                                      Pp
                                                                                                                                                                           ò
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                    ò
```

447

384

563

oy op	916	ACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATC 975	
OY Db	976	CAGGCCCGGCTCCACCTGCAGCATCGGCAGCAGCAGCGGCTGCTGTCGTA 1035	
QY Dp	1036 919	TTGCCCCAGCACGTTGCCATGGAGATGAAAGACATCAACACAAAAAAAA	
QY	1096 979	TICCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAG 1155 	
Qy Db	1156 1039	GGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAG 1215 	
Qy Db	1216	CTCTTIGCCCGGTTTGACAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTG 1275 	
Q Dp	1276	GGGGACTGTTACTACTGTGTGTCAGGGCTGCCGAGGCCCGGGCCGACCATGCCTGC 1335	
Qy	1336	TGTGTGGAGATGGGGGTAGACATGATGAGGCCATCTCGCTGGTACGTGAGGTGACAGGT 1395 	
Qy	1396	GTGAATGTGAACATGCGCGTGGGCATCCACAGGGGCGCGTGCACTGCGGCGTCCTTGGC 1455 	
Oy Dp	1456	TTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAA 1515 	
Qy Db	1516	GCAGGAAGCCGGGCTGGCGCATCCACTCGGGCAACACTGCAGTACCTGAACGGG 1575	
. 40 04	1576 1459	GACTACGAAGTGGAGCCAGGCGGGGGAAGCGCAACGCGTACCTCAAGGAGCAGCAC 1635	
O.Y	1636 1519	ATTGAGACTTTCCTCATCCTGGGCCCAGCAGAAAGGGAAAGGAGAAAGGCATGCTG 1695	
Qy Db	1696	GCCAAGCTGCAGCGCCAACTCCATGGAAGGGCTGATGCCGCATGGGTTCCT 1755	
QY	1756 1633	GATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGAT 1815	
Oy Db	1816	TCCAGCAAAGACAACCGGGGCACCCAAGATGCCTGAACCTGAGGATGAGGTGGGTG	
ογ D	1876	TTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGC 1935 ACTCAGAAAACGCTGCTCTTTCTCTAAA	
ογ Op	7 3	TTTGAGAAGAAGTACTCCCGGAAGGTGGAT 199	

2415 2406 3015 2295 2175 2475 2595 2655 2436 2556 2835 2895 2676 2955 2736 2856 1996 CCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATC 2055 3076 CTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCC--- 3132 1948 GITCIGGCICTCATICIGGCCGCCTIATICGGCCTTGICTACCTICTAATAATCCCACAG AGTGTGGCTGTCCTGCTGGTGTTCTGCATCTGCTTCCTGGTGGCCTGTGTCCTG GCGCCCCATGCCTGCTGTGCGGCCTCGTGGGCACCCTCCCGCTGCGGCATATTCCTGCGG GCGGCCCAGGCAGGAGGAGGGGATGACATGGAGAAGTGAAGTGAAGCTGGACAACAACAAGAGG 1888 chagcigagcgagagcghaagiacchccacciicagacgagiairicacchgcgcgig GCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGC 2236 ATCTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCAC ACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTGACATCACTGCC 2228 recrearcararararacecacacacacaracaracara-receceracasara CTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGAC GICTCCTCCTTGCCAAAAATGATCCTGCTCGCCGTGCTCACCACCTCCTACATCCTCGTC CTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGT --GGTACACGAAGGCCATG 2656 CCAGCTGCAGGGAGGGTGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCG GGGGCCGGTGCCATCTCAGGGCGCGAGCTTCGAGCCGATCATGGCCATCCTGCTATTCTCG CTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCCGCCTAAACTTCCTCTGG AAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGG AATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTTATGTTTGCCTCCATTGCC AACTICICIGAGIICIAIGIGGAGCIGGAGGCAAACAAIGAGGGIGCCGAGIGCCIGCGG CTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGGGGTTCCGGCAG CTTCTGAATGAGTCATCGCTGACTTTGATGAGCTCATGGACAAAGACTTTTACAAGGAC CAGCITCTAATITTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTG CIGCIGCIAATCACCGIGCIGAICIGIGCIGIGIACICCIGIGGIICICIGIICCCIAAG TACCTACACATCACCCGGGT------CCAGTGTTTTCCAGGGTGCCTGACCATCC 2356 TGCCACCTGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACC 2416 AIGCCCACCIGCAGCITICCIGAGGIGICCAICGGGAACAIGCIGCIGAGICICTIGGCC 2476 AGCTCTGTCTTCCTGCACATCAGCACCATCGGGAAGTTGGCCATGATCTTTGTCTTTGGGG CTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGC CTGGAGCTCAGCG-----2008 2296 2536 2437 2176 2347 2596 2407 2557 2896 2956 1831 2056 2117 2176 2677 oy Op q οy 셤 QY Db OY Db g S q δ g oy oy Db Qy g QΥ qq Qy Dp Qy Db οy qq δy g οy a Q

557

788 677 838 737 896 797

```
GGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGA 1016
                                                                                                                                                                                                                                                                                                                                                                        GCGGCTGCTGCTGCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAA 1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAG 1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1167 CCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCG 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GITIGACAAGCIGGGGAGAATCACIGCCICAGGAICAAGAICTIGGGGGACIGITA 1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACTGTGTGTCAGGGCTGCCGGAGGCCCGGCCGACCATGCCCACTGCTGTGTGGAGAT 1346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1347 GGGGGTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAA 1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATGCGCGTGGGCATCCACAGCGGGCGCGTGCACTGCGGCGTTGCCTTGCGAAATG 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGTTCGATGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCG 1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1527 GGCTGGCCGCATCCACATCACTCGGGCAACACTGCGGTACCTGAACGGGGACTACGAAGT 1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1458 ACCAGGGCGAGTGCACATCACAGGGGCTACCCTGGCCCTGCTGGCAGGGGCTTATGCTGT 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGCCAGGCCGTGGTGGCAAGGCGCAACGCGTACCTCAAGGAGCAGCACCATTGAGACTTT 1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1647 CCTCATCCTGGGCGCCCAGCCAGAAACGGAAAGAGGAAAGGCATGCTGGCCAAGCTGCA 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                       978 GGCACGGCTGCAGGCAGGACAGGGGTCACGGCCAGAGAGCACTAACAATTTCCACAGCCT 1037
                                                                                                                                                                                                                                                               CAACGTCATTAGCATCTGCACACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCA 956
    729 GTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAG
                                                                                                                                                                                                                                                                                 798 GAACGTGGCAGGAGTGTACCACAAGGCGCTGATGGAGCGCGCCCTGCGGGCCACGTTCCG
                                                                                                                                                                                                                                                                                                                                 618 CTICGICATCITCACGGCGTAIGCCAIGCIGCCCTIGGGCAIGCGGGACGCCGCCGICGC
                                                                                                                                                       789 CGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAA------CTTAACC
                                                                                                                                                                     GTGGTGATGCCTTCCTCTG--GAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCAC
                                                                                                                                                                                                                        ---- AAAAAGAAGACATGTTCCACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTCGGGGGCGCTTTCGCAGCAGCAGCCGCGCAGCCCTCTGCGGGCCTCTGGTGCCCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAA----
                498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1518
                                                                                                                                                                                                         839
                                                                                                                                                                                                                                                               897
                                                                                                                                                                                                                                                                                                                                                                        1017
                                                                                                                                                                                                                                                                                                                                                                                                                            1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1467
                                                                                                                                                                                                                                                                                                                   957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1287
                셤
                                                                     g
                                                                                                                      g
                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                          ò
                                                                                              Ω
                                                                                                                                                    δ
                                                                                                                                                                            g
                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                            ATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATG 3246
                                                                                                                                                                                                       TATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACACGGGGGTCCCC 3366
                                                                                                                                                                                                                                                                                                                               GCT----GCTGGCTTTCCAAGCCGCACCCGCCCGCCTCAG--CCTGCCTATGTGGCACT 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          549 GTTGGCCTGTGCCGCCCCTGTTCGTGGGGCTCATGGTGTGTAACCGGCATAGCTT 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGGGATCCTGGCGGCAGTGCA 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     435 CCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTGCTGCTCACAGCGGT 494
                                                         3247 AAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAG
                                                                                                                                                                                                                        GACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTG
                                                                                                                                                                                                                                                                                                                 GAGTGTCGAGGGGTGGTCAAGGTGAAGGGGGAAGAGGGGAAGTGACCACCTACTTCCTCAAT
                                        ----AGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTGCTGTGCGCGCTTCTCGCTGCTGCTGGGCCTTCGCTGCGGAGCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 3518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYCLASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 505.2; DB 4;
Pred. No. 1.6e-115;
0; Mismatches 1488;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/09412210
Patent No. 6403358
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: 21529, A NOVEL ADENYLATE CYC;
FILE REFERENCE: 5800-47
CURRENT APPLICATION NUMBER: US/09/412,210
CURRENT FILING DATE: 1999-10-05
NUMBER OF SEQ ID NOS: 2
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 3518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: misc_feature
LOCATION: (0)...(0)
OTHER INFORMATION: 21529 adenylate cyclase
NAME/KEY: CDS
LOCATION: (247)...(3480)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14.2%;
ilarity 50.0%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                      GGGGCCCC 3495
                                                                                                                                                                                                                                                                                                                                                                                                GGCAGGACC 3285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Sim
Matches 1560;
                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
US-09-412-210-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-412-210-2
                                                                  2917
              2857
                                        3133
                                                                                             3187
                                                                                                                        2977
                                                                                                                                                                                                        3307
                                                                                                                                                                                                                                                            3367
                                                                                                                                                                                                                                                                                                                 3427
                                                                                                                                                                                                                                                                                                                                          3217
                                                                                                                                                                                                                                                                                                                                                                     3487
                                                                                                                                                                                                                                                                                                                                                                                                3277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   609
            윤
                                                                                                                  g
                                       à
                                                               g
                                                                                       δ
                                                                                                                                                 ò
                                                                                                                                                                      Q
                                                                                                                                                                                                    οy
                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
```

1106

857

Mon Mar

```
TCTGGTCATCGATCCACGGGCAGAGGAGGAGGATGAGAAGGGCACTGCAGGAGGCTTGCT 1637
                              GCGGACTCGGGCCAACTCCATGGAAGGCCTGATGCCGCGATGGGTTCCTGATCGTGCCTT 1766
                                                                                                                   CTGGGGGGCAGCCAAGCCTTTTGCCCACCTGAGCCACGGAGACAGCCCTGTGTCCACCTC 1757
                                                                                                                                                                                CACCCCTCTCCCGGAGAGACCCTGGCTTCCTTCAGCACCCAGTGGAGCCTGGATCGGAG 1817
                                                                                                                                                                                                                                                                                            GTCCTCGCTTGAGGGCCTCAAGATGCGTCCATCACTGCTGATGACCCGGTTACCTGGAGTC
                                                                                       CTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCCATTGATGATTCCAGCAAAGA
                                                                                                                                                                                                              CCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTT
                                                                                                                                                                                                                                                                       1944 GCTCACCTTCCAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTT
                                                                                                                                                                                                                                                                                                                                                       1938 ACTGTACTTCAGAGAGAGAGAGAGAGAAAGAGTACCGACTCTGGAATCCCCGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATCACCGTGCTGATCTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTGACAAACAGGCCCCCAGCTCTGGCCATCACG - - - TATAGCATCACTTTCCTCCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATAGCCTTGGGCACCGCCACCATCCTTGTCTTTGCCATGGCCATTACCAGCCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2364 GCAGCAGCTCAATTACTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTTTGGCCAGCTCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGCCTCATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2544 TTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGCTGTCGGAATGCCTCATCGTCCGCCTCTATCTGGGCCCCCTTGGACTCCAGGCCCGG
                                                                                                                                                  CAACCGGGGCACCCAAGATGCCCTG--AACCCTGAGGATGAGGTGGA-TGAGTTCCTGAG
                                                                                                                                                                                                                                           CCGTACCCCCGGGGACTAGATGAACTGGACACCGGGGATGCCAAGTTCTTCCAGGT
                                                                                                                                                                                                                                                                                                                                    CGGAGCCTACGTTGCCTGTGCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                AATTITCCCACACTCCACCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                         CAAATACTATGAAGCCTGCACCTTCCTGGTTTTTTCTCTCCAACTTCATCATCCAGATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2184 ACGICIGICCGCAGCAIIGICCGCICACGGGCACAIAGCACCGCAGIIGGCAITIIIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2244 CGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITCITCCCAACATCATCAGACTGCCCTTTCCAAGCTCCCAATGTGTCTCCTCCATGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACCTCTCGGGAGCTCCCTGGGTCTCTCTCTCATCAGTGTCCCATACTCCATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           crecreceresecricererecrecrecrecretrirerseareaserresasers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGCGTCCATGGCTTGGTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTGCTGAAGGAGCCCAAACTGATGGGTGCTATCTCCTTCTTCATCTTCTTCACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCT
1578
                                                                                                                   1698
                                                                                                                                                                                1758
                                                                                                                                                                                                              1884
                                                                                                                                                                                                                                           1818
                                                                                                                                                                                                                                                                                                     1878
                                                                                                                                                                                                                                                                                                                                  2004
                                                                                                                                                                                                                                                                                                                                                                                              2064
                                                                                                                                                                                                                                                                                                                                                                                                                         1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                        2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2595
                            1707
                                                                                       1767
                                                                                                                                                  1827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2484
                                                          1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2604
a
                            à
                                                      8
                                                                               9 G
                                                                                                                                               P Q
                                                                                                                                                                                                     S Q
                                                                                                                                                                                                                                                              9
9
9
9
                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                  O.Y
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ο
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          \text{\frac{1}{12}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δŽ
```

```
3185
                                                                                                                                                                                                                                                                                           3137
                                                                                                                                                                                                                                                                                                                                                                                                             CATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGAT 3245
                                                                                                                                                                                                                                                                                                          2955 TGAGATAATTGCTGATTTTGATGAGCTGCTCTCCAAGCCCCAAGTTCAGTGGGGTGGAGAA 3014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3315 rescanarccansreacreassassascascaressceracasteceresseracascres 3374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2715 GCTGAGGCAGGAGAGGAGGAGGACGACGAGAACCTGACTGGCTGCTCTTGGA
                                                                                                                                                                        TGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAA
                                                                                                                                                                                                                                  CGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGGCAGCTGGAAAA
2784 GGCAACAGGGGAAAAAAGGAGGAGATGGAGGTGCTACAGGCATACAACCGGAGGCTGCTGCA
                                                                       ACTCTACTACTATCAGTCGTGTGTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTC
                                                                                                                                3084 GATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCAC----
                                                                                                                                                                                                                                                                                                                                                   ------CTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGC
                                                                                                                                                                                                                                                                                                                                                                                                                              1135 CGTGGCCCTGGGGTCTAAGCTGGACGTCATCAACAAGCATTCATCAACAACTTCGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGATTGGGCCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTACTTCCTCAA
                                                        TAACATTCTGCCCAAGGACGTGCCGGCCCACTTCCTGGCCCGGGAGCGCCCGCAATGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADENYLYL CYCLASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Tang, Wei-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN
TITLE OF INVENTION: AND USES THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Arnold, White & Durkee STREET: P.O. Box 4433 CITY: Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 15, Application US/08726214 Patent No. 6107076 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 3 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Clii.
STATE: Texucountry: Uni
-77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-726-214-15
                                                                                                               2904
                                                                                                                                                                         2964
                                                                                                                                                                                                                                  3024
                                                                                                                                                                                                                                                                                                                                                   3138
                                                                                                                                                                                                                                                                                                                                                                                3075
                                                                                                                                                                                                                                                                                                                                                                                                          3186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                     셤
                                                                          g
                                                                                                        οχ
                                                                                                                                     g
                                                                                                                                                                                                                            ά
                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
ò
                                                     δ
                                                                                                                                                                         δy
                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
2295
                                                                                                                                                      1660
                                       1480
                                                                            1540
                                                                                                                 1600
                                                                                                                                   2475
                                                                                                                                                                         2535
                                                                                                                                                                                             1700
                                                                                                                                                                                                               2595
                                                                                                                                                                                                                                                    2655
                                                                                                                                                                                                                                                                                                            1876
                                                                                                                                                                                                                                                                                                                                                 1936
                                                                                                                                                                                                                                                                                                                                                                    2835
                                                                                                                                                                                                                                                                                                                                                                                       1996
                                                                                                                                                                                                                                                                                                                                                                                                                                              2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2356
                                                                                                                                                                                                                                 1760
                                                                                                                                                                                                                                                                                                                                                                                                         2895
                                                                                                                                                                                                                                                                                                                                                                                                                            2056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3246
                  g
                                      ò
                                                        셤
                                                                            δy
                                                                                            g
                                                                                                                 δ
                                                                                                                                  g
                                                                                                                                                   δ
                                                                                                                                                                       q
                                                                                                                                                                                            ò
                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                 ΩD
                                                                                                                                                                                                                                                                      οχ
                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                              Óγ
                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                        10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1359
                                                                                                                                                                                                                                                                                                                             ATCAACACAAAAAAAAAAGAAG-------ACATGTTCCACAAGATCTACATACAGAAG 1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAG 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGGCTGCCGTCCTCAGCGGCCTGGGCCTCCCACCTTGCATTTGATCTTGGCCTGGCAA 831
                                                                                                                                                                                                                                         712 GGCCTCTGGTGCCCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATG 771
                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCGGGTTTGACAAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGGACTGTTACTACTGTGTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTC
                                                                                                                                                                                                                                                                                                                                                        TGCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGGAGCGCTGCTGCTCGGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2055 ITGICICCICAGGAGCIIGICAGGAIGCICAACGAGCICIIIGCCAGAIIIGAICGGCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCTGCCGGAGCCCGGGCCGACCATGCCCACTGTGTGGAGATGGGGGTAGACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGC
                                                                                                                                                                                                     Length 4601
                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                   13.1%; Score 463.6; DB 3;
ilarity 51.5%; Pred. No. 3.8e-105;
Conservative 0; Mismatches 1194;
     FILING DATE: CONCURRENTLY HERWITH CLASSIFICATION: 435

PRIOR APPLICATION: 435

PRIOR APPLICATION 1435

PRIOR APPLICATION DATE: 050/005,498

FILING DATE: 04-0CT-1995

ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642

REFERENCE/DOCKET NUMBER: UTSD:450

TELEPHONE: (512) 418-3000

TELEPKX: (512) 44-7577

INFORMATION FOR SEQ ID NO: 15: SEQUENCE CHARACTERICS:
LENGTH: 4601 base pairs

TYPE: nucleic acid
STRANDEDNESS: single
TOPPOLOGY: linear
APPLICATION NUMBER: US/08/726,214
                                                                                                                                                                                                             Best Local Similarity
Matches 1439; Conserv
                                                                                                                                                                                 US-08-726-214-15
                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                           1755
                                                                                                                                                                                                                                                                                                                                                                                                               1815
                                                                                                                                                                                                                                                                                                                                                                                                                                   1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2175
                                                                                                                                                                                                                                                                              772
                                                                                                                                                                                                                                                                                                                                                                                              952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2235
                                                                                                                                                                                                                                                                                                 1635
                                                                                                                                                                                                                                                                                                                                                         892
                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                            QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
```

```
2295
ATCCACAGCGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTG 1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATC 1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3097
                                                                                                                                          GGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTTGAGACTTTCCTCATCCTGGGC 1659
                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----AAACGGAAAGAGGAGAAAGGCATGCTGGCCA 1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACAACATCGTGGGCAAACAGAATACTCTGGCTGCCCTAACAAGAAATTCAATAAATCTG 2714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3011
                                TGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATC
                                                                                                                                                                                                                            CACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGT
                                                                                                                                                                                                                                                                                                                                                                       TTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGTTTTTGCTCACCTTCCAGAGAGAGTTTTGAGAAGAAGTACTCCCGGAAGGTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2476 AGCTCTGTCTTCCTGCACATCAGCACATCGGGAAGTTGGCCATGATCTTTGTCTTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCGAGGAGAGTTTGCTATCCTTGCCTGAAGATATAGTTAAGGAGTCGGTGAGCTGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACAGGAGAAACAGTGGGGCAACGTTCACAGAAGGATCCTGGAGCCCAGAACTGCCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTC--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -- CAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2715 CTTCCAAACCATCTCGCACAAGCTTTGCATGTCCAGTCTGGGCCTGAGGAAATTAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAAGITIGCTI - - - CCTICTICGAGGCIGAIGCCIAIGACCAICCAGTICTCCAICCIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGCTGCTAATCACCGTGCTGATCTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----CCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTGACATCACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCCACCTGCAGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGATATCTGCTCCTACCCAGAGTACTTTGTCTTCACTGGGGTGTTGGCCATGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ------GATTAACGAGACCTATTGGCCCGCAACGTCATCATCTTTGCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCAGCCAG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

4008

```
APPLICANT: Iyengar, Srinivas Ravi
TITLE OF INVENTION: MUTANT ACTIVATED GSALPHA AND ADENYLYL
TITLE OF INVENTION: CYCLASE 2 FOR USE AS THERAPEUTIC AGENTS
FILE REFERENCE: 29770
CURRENT APPLICATION NUMBER: US/08/307,896C
CURRENT FILING DATE: 1994-09-16
NUMBER OF SEQ ID NOS: 9
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                   TYPE: DNA
                                                                                        LENGTH:
                                                                                                                                                                                                                                       a
                                                                                                                                                                                ò
                                                                                                                                                                                                 d
                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                          QQ
                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                         δŽ
                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ٥y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                        2835
CTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGT 2655
                                                                                                                                                                                                                                                                                                                      GGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGAC 3312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3555 CGAGTACAGGCCAAAGAGGAGGAGTCAACGAGATGAGGGAACACAATGAGAAC
                                                                                                                                                                                                                                                                              AGTGGAGAAGATTTTCTGGGGACCAAGGAGCATCACTGCTACTGATGGCCATGTTCCTT
                                                                                                                                                                                                                                        ACCTACGA - - - TCAGGTGGCCCCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACAGCAATGTGAAGATAAATGGGGACATTTGTGTGCCCTGGCTGACTTCTCTTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCCTGCTGACAGAGCCATCTATGCAGGTCTTTTCTGAGTTATGACAACCTGAACCAC
                                                                                                           CCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCG
                                                                                                                                                          AAACTACAGGCAACAGGGGAAAAAAGAGGAGATGGAGGAGGTACAGGCATACAACCGGAGG
                                                                                                                                                                                                                             CTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGC
                                                                                                                                                                                                                                                                                                          AACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGG
                                                                                                                                                                                                                                                                                                                                                 CIGCICAACGAGAICAICGCIGACITIGAIGAGAITAICAGCGAGGAGGGGGITCCGGCAG
                                                                                                                                                                                                                                                                                                                                                                                        CTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGT
                                                   -----AC
                                                                                                                                                 CTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGG
                                                                                                                                                                                                                                                                    AATGATGAACTCTACTATCAGTCGTGTGTGTGTGTGCTGTTATGTTTGCCTCCATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCATGGAGCAGATGAAGCACATGAATGAGCACTCCTTCAACAATTTCCAGATGAAGATT
                             CTCATCTATTTGGTGCTGCTTGTGGTGGGTCCCCCAGCCGCCATCTTTGACAACTATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGGGGTGGTCAAGGTGAAGGGCGAAGGGGGA 3464
                                                 GCCATCT
                                                                   2596
                             2536
                                                                                       3375
                                                                                                          2656
                                                                                                                              3435
                                                                                                                                                 2716
                                                                                                                                                                   3495
                                                                                                                                                                                      2776
                                                                                                                                                                                                                                                 3615
                                                                                                                                                                                                                                                                                      3675
                                                                                                                                                                                                                                                                                                          2956
                                                                                                                                                                                                                                                                                                                              3735
                                                                                                                                                                                                                                                                                                                                                 3016
                                                                                                                                                                                                                                                                                                                                                                    3795
                                                                                                                                                                                                                                                                                                                                                                                        3076
                                                                                                                                                                                                                                                                                                                                                                                                           3855
                                                                                                                                                                                                                                                                                                                                                                                                                              3136
                                                                                                                                                                                                                                                                                                                                                                                                                                                 3915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4215
                                                                                                                                                                                                                                                                   2896
                                                                                  q
                                                                                                                                                                 8
                                                                                                                                                                                                                                           g
                             ά
                                              g
                                                              ò
                                                                                                         ò
                                                                                                                         q
                                                                                                                                            ò
                                                                                                                                                                                      g
G
                                                                                                                                                                                                                         οχ
                                                                                                                                                                                                                                                              S G
                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                            g g
                                                                                                                                                                                                                                                                                                                                                                                    òχ
                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

RESULT 12
US-08-307-896-5
Sequence 5, Application US/08307896C;
Patent No. 6034071
GENERAL INFORMATION:

```
1075
                                                                                                                                                                                                                                                                                                                                                                                                                                      1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1104 GCTCCCTATATCACTCCCTAACCATGCCAAGAACTGTGTGAAAATGGGATTGGATATGTG 1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1302 GCTGCCGGAGGCCCGGGCCGACCATGCCCACTGTGTGGAGATGGGGGTAGACATGAT 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATCACTCGGGCAACACCGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGG 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1457
                                                                                                                                                                                                                                         CATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGCAGCGGCTGCTGTC 1031
                                                                                                                                                                                                                                                                                                                                                                     ------ACACAAAAAAGAAGACATGTTCCACAAGATCTACATACAGAAGCA 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCCAATGATGTGACCCTGGCCAACCACGAGGAGCAGGAAGCCGGGCTGGCCGCATCCA 1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACTTGAGACTTTCCTCATCCTGGGCGC 1661
                                                                                                                                                                                             803
                                                                                                                                                                                                                                                                                                                                                                                         852 CCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCAT 911
                                                                                                                                                                           912 CIGCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTA 971
                                                                                                                                                                                                                                                             CCACAGCGGGGCGTGCACTGCGGCGTCCTTGGCGTTGCGGAAATGGCAGTTCGATGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1404 TGAGATAAGAGCCCATATTTAAAGCAGCACTTGGTGAAAACCTACTTTGTAAT----
                                                                              87;
                                              Length 4008
                                                                              Indels
                                                                                                                                                                                                                                                                                                        1032 GGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGAAGACATCA---
                                              ; DB 3; I
4.9e-104;
                                                               Pred. No. 4.9e-104;
); Mismatches 1240;
                                                Score 459;
                                                                              ó
                                              Query Match 12.9%;
Best Local Similarity 50.8%;
Matches 1370; Conservative
; ORGANISM: Rattus norvegicus US-08-307-896-5
                                                                                                                                                                                                                                          972
                                                                                                                                                                                                                                                                                                                                                                                                                                      1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
2306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2426
                                                                                                                                          TGAGTTAAAAATGTTAATCATGATGGTGGCACTCGTGGGCTACAACACCATTCTACTCCA 2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2460 TTGGAAAGACCTGAAGACCATGGGCTCCGTGTCACCTCTCCATATTCTTCATCACGCTGCT 2519
CAGCCAGAAACGGAAAGAGGAAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAA 1721
                                                                                                                                                                                                                                                                                                               GGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTG 2021
                                                                                         TCTGGACGGACCAAGATGAGAGCATCTGTCCG------CATGACCCGGTACTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTIGIATIGCCAAAAACGICCAICCIIGGCIICTICTCTIIGGAGCIGCAITICTCTCCCI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCTGTA
                   -----CAATCCCAAGGGAGAGCGAGTCCTCAGCATCTCTCAGACCTCGACACAC
                                                                                                                        CTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACGGGGGCACCCA
                                                                                                                                                                                     AGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCG
                                                                                                                                                                                                                 GAATGGGAAGATTAGTACCACGGATGTGCCAATGGGTCAACATAATTTTCAAAATCGCAC
                                                                                                                                                                                                                                                                                                                                    CTCCCTGCTTTTCTATAACAAGAATATAGAGAAAGAATACCGAGCTACTGCACTGCCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTGCTGTG------TACTCCTGTGGTTCTCTGTTCC--CTAAGGCCCTGCAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGTCCCGCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACCTCTCTCATGTGGCTTTTGAAATCATCAGGCATCATCGCCAACCGCCCATGGCCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATCTCCCTCACAATCGTCACCACGCCTATCATACTAACCATGGCTGTGTTCAACATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2163 TITCCIGAGCAACTCTGAGGAGACAACCCTTCCCACTGCCAATACATGCAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2223 TICTGICCCGGAIAACCAGGCGICGATICTICAIGCICGAAACTIGITITICCICCGIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGCTCATCTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITCATATACAGCIGCATCCIGGCCTIGATCTCCTGCTCCGITTTCCTGAGGGTGAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTCCATGGCTTGTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACCCATGCC---CATGTTCTGGATGCGTACAGCCAGGTCCTGTTTCAGAGACCAGGCAT
                                                           CTCCATGGAAGGGCTGATGCCGCATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGA
                                                                                                                                                                                                                                                  CAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGA
                                                                                                                                                                                                                                                                                                                                                                            TGCCCTGTTGGTCTTCTGCTTCATCTGCTTCCAGCTTCTAATTTTCCCACACTCCAC
                                                                                       1512
                                                                                                                                                      1563
                                                                                                                                                                                   1842
                                                                                                                                                                                                                   1623
                                                                                                                                                                                                                                                                                1683
                                                                                                                                                                                                                                                                                                               1962
                                                                                                                                                                                                                                                                                                                                              1743
                                                                                                                                                                                                                                                                                                                                                                                                           1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2403
                             1458
                                                                                                                      1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2667
1662
                                                                                                                                                                                                                                                  1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1983
                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                8
                                                                                                                                               ద
                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
ò
                                                           à
                                                                                                                     ò
                                                                                                                                                                              δŽ
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
```

```
3248
                                                                                                                                                                                                      3026
                                                                                                                                                                                                                                                          3086
                                                                                                                                                                                                                                                                                                            3146
                                                                                                                                                                                                                                                                                                                                                                                                                               3368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3060 AGTGGGTATCAACCATGGGCCTGTAATAGCTGGCGTCATAGGGGGCTCAAAAGCCACAGTA 3119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGA 3428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2727 TCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGC 2786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3429 GIGTCGAGGGGTGGTCAAGGIGAAGGGCAAGGGGGAGATGACCACCTACTTCCTCAA 3485
                                                                                                  GGTGGGCC------GCTCCCACATCACTGCCTGGCTGACTACGCCAT
                                                                                                                                                                                                                                                                                                                                                                              GCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3120 TGACATCTGGGGCAACACTGTCAACGTGGCCAGCAGAATGGACAGCACCGGGGTCCTGGA
                                                               GATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGAT
                                                                                                                                                                                                                                                                                                             CAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACGGGGGTCCCCGA
                        GGTTCTGGGCAGACAGAGTGAATATTACTGTAGGTTAGACTTCTTGTGGAAGAACAAGTT
                                                  AACAGGGGAAAAAGAGGAGATGGAGGAGCTACAAGGCATACAACCGGAGGCTGCTGCATAA
                                                                                                                                                    CTACTATCAGTCGTGTGTGTGTGTGTTATGTTTGCCTCCATTGCCAACTTCTCTGA
                                                                                                                                                                             GTACCACCAGTCCTACGACTGTCTGTGTCTTTGCCTCCATTCCGGACTTCAAGGA
                                                                                                                                                                                                      GTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-726-214-3
; Sequence 3, Application US/08726214
; Patent No. 6107076
; GENERAL INFORMATION:
APPLICANT: Tang, Wei-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: AND USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
STREET: P.O. Box 4433
CITY: HOUSEON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         United States of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 77210
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE:
                                                                                                                            2640
                                                                                                                                                                             2700
                                                                                                                                                                                                                                2760
                                                                                                                                                                                                                                                                                  2820
                                                                                                                                                                                                                                                                                                                                     2880
                                                                                                                                                                                                                                                                                                                                                                                       2940
                                                                                                                                                                                                                                                                                                                                                                                                                 3189
                                                                                                                                                                                                                                                                                                                                                                                                                                          3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3180
                                                                                                  2847
                                                                                                                                                                                                                                                                                                             3087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3249
                         2520
                                                  2787
                                                                                                                                                                                                      2967
                                                                                                                                                                                                                                                          3027
                                                                                                                                                                                                                                                                                                                                                               3147
                     g
                                                à
                                                                    g
                                                                                             ò
                                                                                                                        Db
                                                                                                                                                   δy
                                                                                                                                                                       염
                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                \delta
                                                                                                                                                                                                                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

us-09-750-240-5.rni

```
-----CAATCCCAAGGAGAGAGAGAGAGTCCTCAGCATCTTCAGACCTCGACAC 1511
                                                                                                                                                                                                                                                                                                                            1563 Grectegegeageageaageaartegeartegeareacacacagagarageargaecacaga 1622
                                                                                                                                                                                                                                                                                                                                                                                        1623 GAATGGGAAGATTAGTACCACGGATGTGCCAATGGGTCAACATAATTTTCAAAATCGCAC 1682
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGTCCCGCAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTCCGT 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1983 CATCTTCATCCTCTTTGTCTGCTTGGACGACTTTTGCAATGCAGAAAAAGGCCTC 2042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2043 CACCTCTCTCATGTGGCTTTTGAAATCATCAGGCATCATGGCCAACCGCCCATGGCCACG 2102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2367 GCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTG 2426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCTTTCCTGAGGTGTCCCATCGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGTCTT 2486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGCTCATCTATTT 2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1722 CTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGA 1781
                                                                                                                                                                                                                                                               1512 TCTGGACGGAGCCAAGATGAGAGCATCTGTCCG------CATGACCCGGTACTTGGA 1562
                                                                                                                                                                                                                                                                                                CTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGGCACCCA 1841
                                                                                                                                                                                                                                                                                                                                                            1842 AGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCG 1901
                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGA 1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1803 CTCCCTGCTTTCTATAACAAGAATATAGAGAAAGAATACCGGGGCTACTGCACTGCCAGC 1862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2139 CTGTGCTGTG-----TACTCCTGTGGTTCTCTGTTCC--CTAAGGCCCTGCAACG 2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITCCTGAGCAACTCTGAGGAGACAACCCTTCCCACTGCCAATACATCAAATGCAAACGT 2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TICTGICCCGGATAACCAGGCGTCGATICTICATGCTCGAAACTIGTITTTCCTCCCGTA 2282
                                                                                                          1602 IGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGCGC 1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2547 GGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCTTGG 2606
                                                                                                                                                                         1662 CAGCCAGAAACGAAAGAGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2082 CCTGATG---CTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACGTGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCCCTGTTGGTCTTCTGCTTCATCTGCTTCCAGCTTCTAATTTTCCCACACTCCAC
                                                                                                                             CCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACACCCCCATACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _
_
_
_
_
                                                                                                                                                                                                                                                                                                1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2307
                 1284
                                                                                                                                          1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                QΫ́
                                                                           d
                                                                                                                                  8
                                                                                                                                                                         δ
                                                                                                                                                                                                   8
                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                           œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGGTAGACATGAT 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATCCAGGCCGGCTCCACCTGCAGCATGAGAATGGCAGCAGGAGGGGGCTGCTGCTGT 1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTG 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGC 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTCCCTATATCACTCCCTAACCATGCCAAGAACTGTGTGAAAATGGGATTGGATATGTG 1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1164 CGAAGCCATAAAGAAAGTGAGGGATGCTACCGGAGTTGATATCAACATGCGTGTAGGAGT 1223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1224 GCATTCTGGGAACGTTCTCTGTGGTGTGATTGGTCTCCAGAAGTGGCAGTATGATGTGT 1283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1482 GTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCA 1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      864 CCCCAAAGCAGGACAGATGGAAAACACAACTACCACAATCTGTATGTCAAACGACA 923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGCACACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTA 971
                                                                                                                                                                                                                                                                                                                                                                                                                                      852 CCICTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCAT 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCA--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     804 CTTGCTGCCAGCTCACATCGCCATGGAGGTGAAAGCTGAAATCATTCAGAGGCTGCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCACAGCGGGCGCGTGCTGCGGCGTCCTTGCGGAAATGGCAGTTCGATGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                         87;
                                                                                                                                                                                                                                                                                                                                                                            Length 4008;
                                                                                                                                                                                                                                                                                                                                                                                                         Indels
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                         Score 459; DB 3; I
Pred. No. 4.9e-104;
                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 1240;
                                             APPLICATION NUMBER: US/08/726,214
FILING DATE: Concurrently Herewith
                                                          FILING DATE: Concurrently Herewith CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-OCT-1995
ATTORNEY/ABORT INFORMATION:
WANTE: MIANIA AND CARAGOOD!
                                                                                                                                                                                      UTSD:450
                                                                                                                                                 NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFRENCE/DOCKET NUMBER: UTSD:
TELECOMMUNICATION INFORMATION:
TELEFAX: (512) 418-3000
TELEFAX: (512) 474-757
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 4008 base pairs
TYRE: nucleic acid
STRANBENESS: single
                                                                                                                                                                                                                                                                                                                                                                         12.9%;
50.8%;
                                                                                                                                                                                                                                                                                                                                                                                                        Matches 1370; Conservative
                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                          US-08-726-214-3
                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8, 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ζ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                   3189 GCGGCTCATGGAGCAGATGAGCACATGAGCACTCCTTCAACAATTTCCAGATGAA 3248
                                                                                                                 2460 TIGGAAAGACCIGAAGACCAIGGCCICCGIGICACICICCAIAIICIICAICACGCIGCI 2519
                                                                                                                                                                                                                                                                                                                                                                                                           GATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGAT 3086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3000 TGCCCTGGTGGGAAAACTGGATGCCATCAATAAGCACTCCTTCAACGACTTCAAACTGCG 3059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3060 AGTGGGTATCAACCATGGGCCTGTAATAGCTGGCGTCATAGGGGCTCAAAAAGCCACAGTA 3119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACGGGGGTCCCCGA 3368
 2343 TGAGTTAAAAATGTTAATCATGATGGTGGCACTCGTGGGCTACAACACCATTCTACTCCA 2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2940 GCACGCCCAGGAACCTGAGCGTCAGTACATGCACATAGGCACCATGGTGGAGTTTGCATA 2999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3249 GATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTA 3308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGA 3428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3180 CAAAATACAGGTGACTGAGGAGACAAGCCTCATCTTGCAGACGCTTGGCTACACGTGTAC 3239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2820 GATCATGCTGACTTGATGATCACCTTTCTAAGCCAAAGTTCAGTGCTGTTGAAAAGAT
                                              2727 TCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGC
                                                                                                                                                                                                         2787 AACAGGGGAAAAAGAGGAGATGGAGGAGCTACAAGGCATACAACCGGAGGCTGCTGCATAA
                                                                                                                                                                                                                          3147 GGTGGGCC-------GCTCCCACATCACTGCCCTGGCTGACTACGCCAT
                             2607 CGTCCAIGGCTIGGCTICTTCCAATGAGACCTTIGAIGGGCTGGACTGTCCAGCTGCAGG
                                                                                      2667 GAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCTGTA
                                                                                                                                                                                                                                                                   CATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCCGCAATGATGAACT
                                                                                                                                                                                                                                                                                    2907 CTACTATCAGTCGTGTGTGTGTGTGTTATGTTTGCCTCCATTGCCAACTTCTCTGA
                                                                                                                                                                                                                                                                                                                                             2700 GTACCACCAGTCCTACGACTGTGTGTGTGTTTGCCTCCATTCCGGACTTCAAGGA
                                                                                                                                                                                                                                                                                                                                                                                     GTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3309
                                                                                                                                                                                                                                                                   2847
                                                                                                                                                                                                                                                                                                                                                                                                                                                3027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3087
셤
                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                      g
                             ò
                                                       셤
                                                                                   οŞ
                                                                                                              g
                                                                                                                                             ò
                                                                                                                                                                      g
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

```
PCT-US95-11808-5

Sequence 5. Application PC/TUS9511808

GENERAL INFORMATION:

APPLICANT: IVENGAR, STINIVAS RAVI V.

TITLE OF INVENTION: MUTANT ACTIVATED GSALPHA AND

TITLE OF INVENTION: ADENYLYL

TITLE OF INVENTION: CYCLASE 2 FOR USE AS THERAPEUTIC AGENTS

NUMBER OF SEQUENCES: 6

CORRESPONDENCE ADDRESS:
```

1302 GCTGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGAT 1361

OY Oy

```
CACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGC 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGTC 1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACAATGTCAGCATCCTGTTTGCAGACATTGAGGCCTTCACCAGCCTGGCATCCCAGTG 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACCAACGTGAGCATATTATACGCTGACATTGTTGGCTTCACCCGCCTTGCAAGCGATTG 983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           684 CTACCACAAGCACCTCATGGAGCTTGCCTTGCAGCAAACCTATCGGGACACGTGTAATTG 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             852 CCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCAT 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              912 CTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCCAGGCCTTTCAGGAGACCCGCAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           744 CATCAAGTCCCGGATCAAGCTGGAATTTGAAAAACGGCAGCAGGAACGGCTCCTGCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            804 CTTGCTGCCAGCTCACATCGCCATGGAGATGAAAGCTGAAATCATTCAGAGGCTGCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCCAAAGCAGGACAGATGGAAAACACAAACAACTTCCACAATCTGTATGTCAAACGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 4008;
                                                                                                                                                     MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/11808
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTATTGCCCCAGCACGTTGCCATGGAGAAGAAGACATCA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12.9%; Score 459; DB 5; 360.8%; Pred. No. 4.9e-104; ive 0; Mismatches 1240;
                                                                                                                                                                                                                                                                                                                                                                               PRICE APPLICATION DATA:

APPLICATION NUMBER: US 08/307,896
FILING DATE: 16-SED-1994
ATTORNEY/AGENT INFORMATION:
NAME: Clark, Richard S.
REGISTRATION NUMBER: 26,154
REFERENCE/DOCKET NUMBER: 29970 165/28755
TELEPHONE: (212) 408-2500
TELEPAX: (212) 765-2519
TELEPAX: (212) 765-2519
TELEFAX: 650 6111063
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
Donohue
Brumbaugh, Graves,
                                           30 Rockefeller Plaza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 4008 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: Sil
TOPOLOGY: linear
                                                                                           STATE: New York COUNTRY: U.S. ZIP: 10112-0228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity
Matches 1370; Conserv
                                                                 New York
                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US95-11808-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

á	,	1
QQ	1104	GCTCCCTATATCACTCCCTAACCATGCCAAGAACTGTGTGAAAATGGGATTGGATATGTG 1163
oy Dp	1362	TGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCAT 1421
Qy	1422	CCACAGGGGGGGGGTGCACTGGGGTTGGGGAATGGCAGTTCGATGTGG 1481
O.Y D	1482	GTCCAATGATGACCTGGCCAACCACATGGAAGCAGGAAGCCGGGGTGGCCGCATCCA 1541
οy	1542	CATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGG 1601
qq	1344	CATITCITCAGICACICTGGAGCACITGAATGGGGCTIAIAAAGIGGAGGAAGGAGGATGG 1403
Qy Dp	1602	TGGCAAGCGCAACGCTACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGCGC 1661
QY	1662	SCCAGAAACGGAAAAGAGAAAGGCATGCTGCCAAGCTGCAGCGGACTCGGGCCAA 1
qq	1458	CAATCCCAAGGGAGAGCGACGGAGTCCTCAGCATCTTTCAGACCTCGACACAC 1511
QY Dp	1722	CTCCATGGAAGGGTTGATGCCGCGATGGGTTCTGATCGTGCCTTCTCCCGGACCAAGGA 1781
οy	1782	CTCCAAGGCCTTCCGCCAGATGGTGGTTGATGATTCCAGCAAAGACAACCGGGGCACCCA 1841
qq	1563	
oy Db	1842	AGATGCCCTGAACCTGAGGATGAGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCG 1901
δý	1902	
qq	1683	
ΟŊ	1962	GGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTG 2021
QQ	1743	
Qy	2022	TGCCCTGTTGGTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCAC 2081
δy	2082	
qq	1863	ATTCAAGTACTACGTGACCTGTGCCTCGTCTTTTTTTTTT
δy	2139	CTGTGCTGTGTACTCCTGTGGTTCT-CTAAGGCCCTGCAACG 2186
qq	1923	ACTIGIATIGCCAAAAACGICCAICCTIGGCITCTCCTITGGAGCIGCAIITCICCCI 1982
Qy Db	2187	TCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGT 2246
ò	2247	CCTGCTTGTGTTTACTTGTCATTGCCAACGTGTTCACCTGTAAACCAAAACGATAACG 2306
. g	2043	
δy	2307	GAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTGACATCACTGCCTGC
QQ	2103	GATCTCCCTCACATCGTCACCACGGCTATCATACTAACCATGGCTGTGTTCAACATGTT 2162
δy	2367	GCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTG 2426

=

=

=

_ =

2222 2486 2342 2666 2726 2519 2786 2846 2639 2699 2966 2759 3026 2819 3086 2879 3146 2939 3188 3248 3308 3119 TTTCCTGAGCAACTCTGAGGAGACAACCCTTCCCACTGCCAATACATGCAAACGT TTCTGTCCCGGATAACCAGGCGTCGATTCTTCATGCTCGAAACTTGTTTTCCTCCGGTA 2343 TGAGTTAAAAATGTTAATCATGATGGTGGCACTCGTGGGCTACAACACCATTCTACTCCA 2460 TIGGAAAGACCTGAAGGCTCCGTGTCACTCCCATATTCTTCATCACGCTGCT TCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGC GGTGGGCC------GCTCCCACATCACTGCCTGGCTGACTACGCCAT GCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAA CCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGA CAGCTTTCCTGAGGTGTCCCATCGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGTCTT CCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTTGGGGCTCATCTATTT GGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGG CGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGCAGG CACCCATGCC - - - CATGTTCTGGATGCGTACAGCCAGGTCCTGTTTCAGAGACCAGGCAT GAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCTGTA AACAGGGGAAAAAGAGGAGGAGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCATAA CAAAAAAGGGGGGGGGGGGGGAGTAGAAACCATGGAGAACCTAAAATCGAGTGCTGCTGGAGAA CTACTATCAGTCGTGTGAGTGTGTGCCTGTTATGTTTGCCTCCATTGCCAACTTCTCTGA GTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGGCTGCTCAACGA GATCATCGCTGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGGCAGCTGGAAAAGAT TGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACGGGGGTCCCCGA GTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTACTTCCTCAA 2163 2667 2727 2787 2760 2940 2427 2223 2487 2283 2547 2607 2403 2520 2580 2907 2967 3027 2820 3087 2880 3147 3189 3309 3120 3369 3180 δ 셤 οy Q οy g ò g õ g QY Op ŏ g δ qq δ g ŏ ద ŏ Dp δ g g δ q g g 셤 à ò δ οy 셤 8

```
1321
                                                                                                                                                                                                                               1441
                                                      1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1681
                                                                                                                                                                       1381
                                                                                                                                                                                                                                                                                     1501
                         qq
                                                                              g
                                                                                                             ò
                                                                                                                                         g
                                                                                                                                                                                             g
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
ò
                                                      οŽ
                                                                                                                                                                       ò
                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1330 TITGCAGATATIGIGGCTITACCCAGCIGTCTCTCTGCTIGCAGTGCCCAGGAGCTCGTG 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1090 ATGTCCTACTACATGGCAGACCGTAAGCACCGAAAGGCCTTCCTGGAGGCCCGCCAGTCG 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                973 ATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGCGGAGCGGCTGCTGTCG 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1270 AAGGACCAGCAGCAGTTCAACACCATGTACATGTACCGCCATGAGAATGTCAGCATCCTG 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1141 TTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        913 TGCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTAC 972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  853 CTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAACGTCATTAGCATC 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1033 GTATTGCCCCAGCACGTTGCCATGGAGATGAAAGAAGACATCAACACA-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 4533;
                                                                           APPLICANT: TOTAL MEL-Jen
APPLICANT: Gilman, Alfred G.
TITLE OF INVENTION: SOLUBLE MAMMALIAN ADENYLYL CYCLASE
TITLE OF INVENTION: BUD USES THEREFOR
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSE: AARONIG, White & Durkee
STREET: P.O. Box 4433
CITY: Houston
STATE: Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 12.4%; Score 441.6; DB 3; Best Local Similarity 50.1%; Pred. No. 1.1e-99; Matches 1359; Conservative 0; Mismatches 1284;
                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/005,498
FILING DATE: 04-OCT-1995
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REPERSNCE/DCOKET NUMBER: UTSD:450
TELEPHONE: (512) 418-3000
TELEPHONE: (512) 474-7577
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/726,214
FILING DATE: Concurrently Herewith
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                    PC-DOS/MS-DOS
                                     Sequence 5, Application US/08726214
Patent No. 6107076
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 4533 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear
                                                                                                                                                                                                                                        77210
                       -08-726-214-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-726-214-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

1560 1620 AGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTGAGGGCTGCCGGAGGCCCGGGCC 1320 1630 GGTGGCGTCCTGGGCCCAGAAGCGCTGGCAGTATGATGTTATGGTCTACCGATGTCACTGTG 1689 GAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATG 1740 1869 GACAGCTCAAAATGGCCTCAACGGCTCGGCCCTGCCAAACGGAGCACCGGCATCCAAGCC 1928 1741 CCGCGATGGGTTCCTGATCGTGCCTTCTCCGGGACCAAGGACTCCAAGGCCTTCCGCCAG 1800 1929 CAGCTCCCCTGCCCTTATTGAGACCAAGGAGCCCAATGGGAGTGCCCATGCCAGCGGCTC 1988 1801 ATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAG 1860 2049 CCGCCGCAGGCTGCGCCTCCAGGACCTGGCAGACCGTGTGGTGGACGCCTCTGAGGATGA 2108 1920 GAAGGACCATGTGCGCCGGTTTTTGCTCACCTTCCAGAGAGGAGTTTTGAGAAGAAGTA 1979 2039 2040 CTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACCCCACACCTGATGCTTGGGATTTA 2099 2100 TGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGG 2159 2349 crircergerregagacarcirecrerrearcergaccarcrirearecraecerecre 2408 2409 CCCCAGGGCATTTCCTAAGAAGCTCGTGGCCTTCTCATCTTGGATTGACCGGACCCGCTG 2468 GACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCCATCTCGCTGGTA CGTGAGGTGACAGGTGTGAATGTGAACATGCGCCGTGGGCATCCACAGCGGGCGCGTGCAC GCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTG 1561 CAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTAC 1989 CACATCAGAGGAGGCTGAAGAACAGGAGGCCCAGGCTGACAACCCCTCGTTCCCCAACCC 1861 GATGAGGTGGATGAGT-TCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCG 1980 CTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTG 2229 CTACTCGGTGGAGAAGGAGAAGCAGAGTGGGGCTGCCTTCAGCTGTTCCTGTGTGGTCCT 2160 TTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACA 2220 TAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACAT 2109 GCACGAACTGAACCAGCTTCTTAACGAGCCCTGCTGGAGCGGGAGTCGCCCAGGTGGT 2169 AAAGAAGAAACACATTCCTCCTAACGATGAGGTTCATGGACCCAGAGATGGAAACACG

Mon Mar 3 10:27:44 2003

```
2329
                                                                                                                                                                                                                                                                                        2708 TCACAGGCGCCGTGACTGCCATCAACCTGTATGCCTGGTGTCCTGTCTTTGATGAATACG 2767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3368 AGGAGGAAAAGTCAGACAAGGAGCGCTGGCAGCACTGGCTGACCTGGCAGACTTTGCAC 3427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .3488 GCATAGGCATGAACAAAGGAGGAGTCTGGCTGGAGTCATTGGAGCCCGGAAGCCACACT 3547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3308 ATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACGGGGGTCCCCG 3367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2828 TITCCACCCTGGGCTCAATGGCACTGACAGCAGCTGCCCTGGTGCCTTCCAAGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2888 CGATGATGATGATGATGATGATGATGATGATGATTTACTACTTCTCACGCCACGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3008 TGTACGAGATGCGCCGGTGGAACGAGCCTTGGTCACCAACATGTTGCCAGAGCATGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1529 CATGCTGAGCTGTCTCCAGTACATGGGACCT-TACAACGTGACAACCGGGATAGAGC
                                                                                                                               TGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCG
                                                                                                                                                                                                                             2648 TCGCCACCATCATGCTGGTGCAGGTCAGCCACATGGTGAAGCTGACACTCATGCTGCTCG
                                                                                                                                                                                                                                                                                                                                                            2768 ACCACAAACGCTTTCAGGAAAAGGACTCTCCTATGGTGGCCTTAGAGAAGATGCAGGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2747 AATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAAGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2807 IGGAGGAGCIACAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGAACTCTAACTATCAGTCGTGTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3248 CTCTCCTGGACAATCCCAAATTCCGGGTCATCACCAAGATCAAAACCATCGGCAGCACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3308 ATATGGCAGCTTCTGGAGTCACACAGATGTCAACACCAATGGCTTTACAAGCTCCAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3188 TGCGGCTCATGGAGCAGATGAAGCACATGAAGCACTCCTTCAACAATTTCCAGATGA
2280 GTTCACCTGTAACCACACCCCCATACGGAGC-----TGTGCAGCCCGGATGCTGA
                                2469 GGCCAGAAATACCTGGGCCATGTTAGCCATCTTCATTCTGGTTATGGCCAATGTTGTGGA
                                                                 2330 ATTTAACACCTGCTGACATCACTGCCTGCCACCTGCAGCTCAATTACTCTTGGGCC
                                                                                                                                                              2588 TGGACGGTGCTGTATGGAGAACCCCAAGTACTACAACTATGTTGCTGTGCTGTCCCTCA
                                                                                                                                                                                              2450 GGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCA-GCATCGGG
                                                                                                                                                                                                                                                              2509 AAGTIGGCCAIGAICTIIGICIIGGGGCICAICIAITIGGIGCIGCIICIGCIGGGICCC
                                                                                                                                                                                                                                                                                                                               2569 CCAGCCGCCATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCC
                                                                                                                                                                                                                                                                                                                                                                                                2629 AATGAGACCTTTGATGGGCTGGACTGTCCAGCTGCAGG--GAGGGTGGCCCTCAAATATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2687 TGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGGGCGCTGTATCTGCATGCTCAGCAGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3248
                             g
                                                                                                                    δ
                                                                                                                                                        a
                                                                                                                                                                                  b Q
                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                             Qy
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
 δ
                                                               ò
                                                                                       g
                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
```

```
3487
                         3427
                                                                         3727
ACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGG
                                                         3428 AGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGGAGATGACCACCTACTTCCTCAATG
                                                                                         3488 GGGCCCCAG 3497
                                                                                                        GGCGGGACAG 3737
                                                                    qq
        g
                        οχ
                                    qq
                                                   δy
                                                                                        ŏ
                                                                                                      q
```

Search completed: March 1, 2003, 04:06:06 Job time: 136.927 secs

			·	
\$2 -				
			A STATE OF THE STA	
		** %* 7. **		
,				
	·			
•				•

Sequence 848, App Sequence 180, App Sequence 66, Appl Sequence 171, Appl Sequence 445, App Sequence 415, App Sequence 1351, Ap Sequence 1351, Ap Sequence 2559, Ap Sequence 159, Ap Sequence 124, App Sequence 176, App Sequence 176, App Sequence 176, App Sequence 176, App Sequence 177, App Sequence 177, App Sequence 176, App Sequence 177, App Sequence 177, App Sequence 177, App Sequence 177, App Sequence 178, Appl Sequence 178, Appl Sequence 173, Appl Sequence 173, Appl Sequence 173, Appl Sequence 173, Appl Sequence 44, Appl

Sequence

Perfect score:

Sequence:

OM nucleic

on:

Run

Scoring table:

Searched:

Database

```
DB 10; Length 3549;
                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5, Application US/09750240

Patent No. US2000103147A1

GENERAL INFORMATION:

APPLICANT: Hammon, H. K.

APPLICANT: Ding, P.

APPLICANT: Gao, M.

TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART

TITLE OF INVENTION: GENE THERAPY

FILE REFERENCE: 22000205673

CURRENT FILING DATE: 1990-10-12

PRIOR APPLICATION NUMBER: US 09/402,667

PRIOR FILING DATE: 1999-09-05

PRIOR FILING DATE: 1997-09-05

PRIOR FILING DATE: 1997-09-05

PRIOR PELING DATE: 1996-09-05

PRIOR FILING DATE: 1996-09-05

NUMBER OF SEQ ID NOS: 13

SOFTWARE: FASTSEQ for Windows Version 4.0
US-09-933-797-165
US-09-964-532-13136
US-09-954-531-848
US-09-764-868-180
US-09-764-868-180
US-09-764-868-182
US-09-989-442-71
                                                                               0 US-09-764-869-445

US-09-784-845-487

US-09-764-868-1351

US-09-764-868-1353

US-09-764-868-1353

US-09-766-868-1353

US-09-9176-868-1359

US-09-917-800A-1569
                                                                                                                                                                US-10-051-643-123
US-09-880-505-123
US-09-880-505-176
US-10-051-643-173
US-09-880-505-173
US-09-945-901-44
US-10-038-937-44
US-10-038-937-44
US-10-038-937-44
US-10-038-937-43
US-10-038-937-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 3549;
100.0%; Pred. No. 0;
ive 0; Mismatches
 ; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-750-240-5
 US-09-750-240-5
Query Match
 O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 5, Appli
Sequence 10, Appli
Sequence 12, Appli
Sequence 13, Appli
Sequence 23, Appli
Sequence 23, Appli
Sequence 181, Appli
Sequence 69, Appli
Sequence 7, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 792, Appli
Sequence 20, Appli
Sequence 11, Appli
Sequence 13, Appli
Sequence 14, Appli
Sequence 18, Appli
Sequence 18, Appli
Sequence 18, Appli
Sequence 18, Appli
                                                                                          (without alignments)
15188.998 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                            US-09-750-240-5
3549
1 atgtcatggtttagtggcct.....aagggaocaaggtgggcact 3549
                                                                               March 1, 2003, 02:24:48 ; Search time 145.712 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptcdata/2/pubpna/USO7_PUBCOMB.seg:*
/cgn2_6/ptcdata/2/pubpna/PCT_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO6_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO6_PUBCOMB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO7_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/NSO7_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO8_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO8_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO8_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO8_NEW_PUB.seg:*
/cgn2_6/ptcdata/2/pubpna/USO8_NEW_PUB.seg:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US60_PUBCOMB.seq:*
           GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                460893 segs, 311809382 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                 Published_Applications_NA:
                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                         nucleic search, using sw model
                                                                                                                                                                            IDENTITY_NUC Gaport 1.0
                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3552
4942
3582
1812
4523
4523
837
915
915
3518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
Match I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1000.0
98.2
98.2
98.0
98.0
98.0
14.9
14.9
111.2
111.2
80.3
7.0
```

ô

Gaps

Indels

Best Local Similarity 100, Matches 3549; Conservative

3484.8 3478.4 13808.4 1703.4 1703.4 529.6 529.6 529.6 529.6 529.6 528.4 268.4 268.2 268.2 208.2 208.2 208.2 208.3 209.6

Score

Result NO. 61 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGGCAGGTGGCTTCTGCACG 120

1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT 60

> ద ò

Mon Mar

q	61	
oy op	121	CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCCAGCCCCCTGCGGGGCCCC 180
Qy Dp	181	CCTCGGTGCCCTGGCAGGATGACGCCTTCATCCGGAGGGCGGCCCAGGCAAGGCAAG 240
Oy Dp	241	GAGCTGGGGCTGCGGGCAGTGGCCTTCGAGGATACCGAGGTGACAACGACAGCG 300
oy Ob	301	GGCGGGACGGCTGAGGTGCCCCGACGGGTGCCCAGGAGTGGCGATCCTGCTGGCGC 360
Qy Dp	361	CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGCCAAGCTGGAGCGCCTGTAC 420
Qy Dp	421	CAGCGGTACTTTTTCCAGATGAACCAGAGCCTGACGCTGCTGCTGGCGGTGCTGGTG 480
Qy Db	481	CIGCTCACAGGGGTGCTGGCTTTCCAAGCGCACCGCCGCCCTCAGCCTGCCT
Qy Dp	541	GTGGCACTGTTGGCCTGTGCCGCCCCTGTTCGTGGGGCTCATGGTGGTGTGTAACCGG 600
Qy Db	601	CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGACGTGGTGCTGGGCTCCTGGCG 660
Qy Db	661	GCAGTGCAGGTCGGGGGCGCTTTCGCAGCAGCAGCAGCCCCTCTGCGGGCCTCTGG 720
Qy	721	IGCCCTGTGTTCTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGTGCC 780
Oy Db	781	GTCCTCAGCGGCCTGGGCTCTCCACCTTGCATTTGATCTTGGCCTGGCAACTTAACCGT 840
Qy Dp	841	GGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC 900
Qy Db	901	GTCATTAGCATCTGCACACACTATCCAGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAG 960
Oy Db	961	ACCCGCAGTTACATCCAGGCCCGGCTCCACCGGCGCAGAATCGGCAGCAGGGGGG 1020
Oy Dp	1021	CTGCTGCTGTCGGTATTGCCCCAGCACGTTGCATGGAGATGAAGAAGAAGACATCAACACA 1080
Oy Db	1081	AAAAAAGAGACATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTG 1140
δ	1141	TTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGGGCCTGGTC 1200

CCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAG 2221 AGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATG TTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTC GACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTGGTA TGCGGCGTCCTTGGCTTTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGACCCTG CAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGTGGCAAGCGCAACGCGTAC GAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATG ATGGGCATTGATGATTCCAGCAAAGACAACGGGGGGCACCCAAGATGCCCTGAACCCTGAG TICATCIGCTICATCCAGCTICTAATTTICCCACACACTCCACCCTGATGCTTGGGATTTAT 2041 TICATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCCTGATGCTTGGATTTAT 2101 GCCAGCATCTTCCTGCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTATAATCTGTGGT 2161 TCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATGTCGCGCTCACGGGCACAT AGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATG GATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGG TCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACAT AGGATCAAGATCTTGGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCCGGGCC GCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGT g ò g Qy Db 94 95 97 qq δ Ω Oy Db 90 A9 정 ŏ qq ò g õ g

m

99 2381 TTCACCTGTMACACACCCCATANCGAGCTGCTGCACCCGGAATTTAACACCT 3340 2391 TCCACCTGTMACACACCCCATANCGAGCTCACCCGGAATTTAACACCT 3440 2391 TCCACCTGTMACACACCCCCATACCACCACCCACCACCTCACCT

```
1;
AATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTAC 3420
                                                   TCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTACTTC 3480
                                                                                   CCCCAGCAGTTAACAGGGCCCAGCCACAAATTCAGCTGAAGGGACCAAG 3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98.2%; Score 3484.8; DB 10; Length 3552; 99.0%; Pred. No. 0; 11ve 0; Mismatches 32; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32; Indels
                                                                                                                                                                                                                                                                                   : GENE THERAPY FOR CONGESTIVE HEART
                                                                                                                                                                                                                                                                                                               CON NUMBER: US/09/750,240
NTE: 2001-10-12
NUMBER: US 09/472,667
S: 1999-12-27
N NUMBER: US 09/008,097
                                                                                                                                                                                                                                                                                                                                                                                                                                        ios: 13
for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                 1: 1998-01-16

NUMBER: US 08/324,757

1: 1997-09-05

NUMBER: US 60/048,933

1: 1997-06-16

NUMBER: US 08/708,661

1: 1996-09-05
                                                                                                                                                                                                 ation US/09750240
03147A1
                                                                                                                                                                                                                                                                                            N: FAILURE
20002056723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ervative
                                                                                                                                                                                                                               Н. К.
Р. А.
                                                                                                                                                                                                                                                            s. R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             piens
                                                                                                                           549
                                                                                                                                               549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

360 360 420 480	4 4 0 0	660 660 720 720	780 780 840 840	096 006 006	1020 1020 1080 1080	1137 1140 1197 1200	7 1 0 2	1377
	TCACAGCGGTGCTGCTTTCCAAGCCGCACCGGCCGCCTCAGCTGCTGTGTGTG	CATCTGGCG	CCTGTGTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCC 7	#TGCCTTCCTCTGGAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCACCAAC	CGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGAGGGGGGGG	AAAAAAGAAGAC ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATC 1	TGACCCTGAATGAGCTCTTTGCCCGGTTTGACAAGCTGGCTG	GACCATGCCCACTGCTGTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGCTG 1
660 660 660 660 660 660 660	1 17 - 17 17 - 17	CAT 	1GC 1GT GTC GTC	GGTG GGTGA 	(1 - (1) (n - (n)	AAA AAA CTG	5-5 5-5	0 – 0 0 – 0 0 – 0
301 301 361 361 421	8 8 4 4	601 601 661	721 721 781 781	841 841 901 901	961 961 1021 1021	1081 1081 1138 1141	6 6 6	1318
Oy Oy	00 OX	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	03 03 04	op ox	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Oy Oy Dp	20 G G G	Oy Dp

1681 GAGGAGAAGGCCATGCTGGCCAAGCTGCAGGGACTCGGGCCAACTCCATGGAAGGCCTG CTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAAGCGCAAGCG GTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCATCCACAGCGGGGGGCGTG CACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGACC GAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTG CAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCT GAGGATGAGGTGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG TACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTC ATGITCACCIGIAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA CCTGCTGACATCACTGCCTGCCACCTGCAGCACTCAATTACTCTCTGGGCCTGGATGCT CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC ATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGC GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAAC ò g οy q Qγ ద oy B Q D Qy Db Oy Oy Oy qq oy da Db Qy Db Qy Db QY Db Q P Óγ g ŏ g QY QQ ò qq ò S

쉱 δ 엄 ò Q ò 8 ò g οχ Q δ g ò 셤 ò g οŽ g δ g ò g ŏ g οy 9 δ q οy q οy g

```
GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC 420
                                                                                                                                                 HUMAN ADENYLYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCCCCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      145 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGGGACGGCTGAGGTGGCGCCCCGACGCGGTGCCCAGGAGTGGGCCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 4942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36; Indels
                                                                                                                                                  Ø
                                                                Sequence 1. Application US/10201000
| Publication No. US20020187540A1
| GENERAL INPORMATION:
| APPLICANT: Tomlinson, James E.
| APPLICANT: Tomlinson, James E.
| APPLICANT: Tomlinson, James E.
| TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF P.
| TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF P.
| TITLE OF INVENTION: CYCLASE
| CURRENT APPLICATION NUMBER: US/10/201,000
| CURRENT APPLICATION NUMBER: US/09/474,076
| PRIOR FILING DATE: 1999-12-12
| PRIOR FILING DATE: 1999-12-12
| PRIOR FILING DATE: 1999-7-01
| PRIOR FILING DATE: 1997-07-01
| PRIOR FILING DATE: 1997-07-01
| PRIOR FILING DATE: 1997-07-01
| WIMBER OF SEQ ID NOS: 2
| SEQ ID NOS: 2
| SEQ ID NOS: 2
| SEQ ID NOS: 2
                                                                                                                                                 QF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 3478.4;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 98.0%;
Best Local Similarity 98.9%;
Matches 3513; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: human type VI
                                                                                                                                                                                                                                                                                                                                                                                                                                           ; NAME/KEY: CDS
; LOCATION: (145)..(3648)
US-10-201-000-1
   AAGGTGGGCACT 3552
                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 4942
                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g A
   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οý
                                                                                                                                                                                                                                                                              2817
                                                                                                                                                                                                                     2757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3357
                                                                                                                                                                                                                                                                                                                                                                                             TTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGCCTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1481 TTCTCACAATGGGGCCCCACCAGTAAACAGGGCCCACCACAAATTCAGCTGAAGGGACC
CGCCTAAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGGAGGAGATGGAGGAGCTA
                                                                                                                                                                                                                                                                                                                                      CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC
                                                                                                                                                                                                                                                                                                                                                    ATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGCCAAACAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTTTGCCTCCATTGCCAACTTCTCAGGTTCTATGTGGGGGCTGGAGGCAAACAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                          AIGATCTTTGTCTTGGGGGTCATCTATTTGGTGCTTCTGCTGGTGGTCCCCCAGCCGCC
                                                                       ATGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCACC
                                                                                                                                                             TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG
                                                                                                                                                                                                                    ATTCTGCTGGTGTTTGCGCTGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCCACATCACTGCCCTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTCTAGTCGTATGGACAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGGTCCCCGACCGAATCCAGGTGACCAGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCGAAGGGGGAGATGACCACCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCCTCAATGGGGGCCCCCAGCAGTTAACAGGGCCCAGCCACAAATTCAGCTGAAGGGACC
                                                                                                   ATCTTTGACAACTATGACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2461
                                          2518
                                                                      2521
                                                                                                                              2581
                                                                                                                                                                                                                                               2701
                                                                                                                                                                                                                                                                                                        2761
                                                                                                                                                                                                                                                                                                                                                                2821
                                                                                                                                                                                                                                                                                                                                                                                                                          2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3421
                                                                                                                                                             2638
                                                                                                                                                                                        2641
                                                                                                                                                                                                                                                                            2758
                                                                                                                                                                                                                                                                                                                                      2818
                                                                                                                                                                                                                                                                                                                                                                                               2878
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3538
                                                                                                                                                                                                                     2698
```

ä

Gaps 9

ä

180

324

120 264

204

240

384

360

504

444

480

624 540

염 δ

ò

600 744 660 804 720 780	8 6 6 6 6	960 1104 1020 1164 1080	13 19 19 19 19 19 19	1317 1464 1377 1524 1437 1584	1497 1644 1557 1704 1617
TGGCACTGTTGGCCGCCGCCCCTGTTCGTGGGGCTCATGGTGGTGTGTAACCG	THE CONTROLL OF THE FAT CARLOW AND A CONTROLL OF THE CONTROL OF TH	GTCATTAGCATCTGCACACACAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAG	AAAGAAGAC ATGTTCCACAAGATCTACATACAGAAGCATGACAATGTCAGCA	CTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTCTCAGGGCTGCCGGAGGCCCGG	
541 685 601 745 661 805	4 60 60 64 60	901 1045 961 1105 1021		1258 1405 1318 1465 1378	1438 1585 1498 1645 1558
3 8 3 8 3 8 3	B & B & B &		6 6 6 6 6	2	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

TACCTCAAGGAGCAGCACATTGAGACTTTCCTCATCCTGGGCGCCCAGCAGAAACGGAAA GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCA CTGCTGAGTCTCTTGGCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCC ATTCTGCTGCTGTTTGCGCTGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCC TGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACACTCCACCTGATGCTTGGGATT CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAAC ATGTTCACCTGTAACCACCCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA CCTGCTGACATCACTGCCTGCCACCTGCAGCACCTCAATTACTCTCTGGGCCTGGATGCT CCCCTGTGTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATG TITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG g q Qγ a Sy PP οy g Q D O D ò qq 9 9 40 60 60 Q Pp Qγ QQ QY Db ŏ g ద Qγ Db В δ οy δ Qγ ŏ

```
682
                                                                                                                                                                                      g
                                                                                                                                                                                                     δy
                                                                                                                                                                                                                qq
                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
  3057
                                                                                                                                                                                                                                                                                                                    3477
                                                                                                                                                                                                                                                   3444
                                                                                                                                                                                                                                      3297
                                                                                                                                                                                                                                                                                                       3564
                                                                                                                                                                                                                                                                                                                                              CAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC
                                                     GGTGCCGAGTGCCTGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC
                                                                                                                                  GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                            TCAGGGCTGAACGCCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT
                                                                                                                                                                                                           GACTACGCCATGCGCCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                                                                                                                                                     3238 TICCAGAIGAAGAITGGGCTGAACAIGGGCCCAGICGIGGCAGGIGTCAICGGGGCTCGG
                                                                                                                                                                                                                                             AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTCTAGTCGTATGGACAGCACG
                                                                                                                                                                                                                                                                       GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                                                                                                APPLICANT: Hammon, H. K.
APPLICANT: Insel, P. A.
APPLICANT: Ding, P. A.
APPLICANT: Post, S. R.
APPLICANT: Gao, M.
TITLE OF INVENTION GNE THERAPY FOR CONGESTIVE HEART
FILE REFERENCE: 220002056723
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 12, Application US/09750240 Patent No. US20020103147A1
                                                                                                                                                                                                                                                                                                                                                                         AAGGTGGCCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                       AAGGTGGGCATT 3696
                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 12, Applicati
Patent No. US200201031
GENERAL INFORMATION:
APPLICANT: Hammon, H.
APPLICANT: Insel, P.
APPLICANT: Post, S.
APPLICANT: Gao, M.
TITLE OF INVENTION:
TITLE OF INVENTION:
FILE REFERENCE: 22000
                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-750-240-12
                                                                                                                                                                                                                                                                                                                                3565
      2845
                                                                                                              3085
                                                                                                                                                                                                                                                                3298
                                                                                                                                                                                                                                                                                                                                              3478
                                2905
                                             2818
                                                                                                 2938
                                                                                                                           2998
                                                                                                                                        3145
                                                                                                                                                                   3205
                                                                                                                                                                                3118
                                                                                                                                                                                                           3178
                                                                                                                                                                                                                        3325
                                                                                                                                                                                                                                                  3385
                                                                                                                                                                                                                                                                                          3358
                                                                                                                                                                                                                                                                                                      3505
                                                                                                                                                                                                                                                                                                                    3418
                                                                                                                                                                                                                                                                                                                                                            3625
                                                                                                                                                                                                                                                                                                                                                                        3538
                                                                                                                                                                                                                                                                                                                                                                                      3685
                   2758
                                                          2965
                                                                       2878
                                                                                    3025
                                                                                                                                                      3058
                                                                                                                                                                                                                                                                            3445
                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                    g
       q
                  δ
                              Ω
                                            ò
                                                      g
                                                                       δ
                                                                                 g
                                                                                              οy
                                                                                                            g
                                                                                                                       ΩŽ
                                                                                                                                    g
                                                                                                                                                     ŏ
                                                                                                                                                                ద
                                                                                                                                                                              ò
                                                                                                                                                                                          g
                                                                                                                                                                                                         δ
                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        681
                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                          22 ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGAAAAAAGAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCTGGGGCTGCGGCCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGGGGACGGCTGAGGTGGCGCCCGACGCGGTGCCCAGGAGTGGGCGATCCTGCTGGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTTTGGTGCAGGTGTTCCAGTCGAAGCAGTTCCGTTCGGCCAAGCTGGAGCGCCTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCGGTACTTTTTCCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATAGCTTCCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCATCCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCCGCGCAGCCCCTCTGCGGGCCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                          DB 10;
                                                                                                                                                                                                                                                                                                                                                      88:
                                                                                                                                                                                                                                                                                                                       Score 3379.2; Pred. No. 0; 0; Mismatches
CURRENT APPLICATION NUMBER: US/09/750,240
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: US 09/472,667
PRIOR PILING DATE: 1999-12-27
PRIOR PILING DATE: 1998-01-16
PRIOR PILING DATE: 1998-01-16
PRIOR FILING DATE: 1997-09-05
PRIOR FILING DATE: 1997-09-05
PRIOR PLILOATION NUMBER: US 60/048,933
PRIOR PPLICATION NUMBER: US 60/048,933
PRIOR PLILOATION NUMBER: US 60/048,933
PRIOR PLILOATION NUMBER: US 60/048,933
PRIOR PILING DATE: 1997-06-16
PRIOR FILING DATE: 1996-09-05
NUMBER OF SEQ ID NOS: 13
SOFTWARE: FASTSEQ for Windows Version 4.0
                                                                                                                                                                                            4.0
                                                                                                                                                                                                                                                                               ; OTHER INFORMATION: Modified AC-VI
US-09-750-240-12
                                                                                                                                                                                                                                                                                                                        95.2%;
llarity 97.4%;
Conservative (
                                                                                                                                                                                                                                       TYPE: DNA ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 3458; Conserv
                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
```

ä

GCCGACCATGCCCAAC

Qy Db	1798	CAGATGGGCATTGATGATGCAGCAAAGACAACGGGGCACCCAAGATGCCCTGAACCT	1857 1878
QY	1858	GAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTG GAAGATGATGATCAGCTG GAAGATGAGTGAGTTCCTGGGCCGAGCCATCGATGATGATCAGTTCATGATCAGCTG GAAGATGATGATCAGTTCAGAGCCATCGATGATGATCAGCTG GAAGATGAGTAGATCAGAGCCATCGATGATGATCAGTGATCAGTG GAAGATGATCAGATCA	1917
QY		AAGGACCATGTGCGCGGTTTTTGCTCACCTTCCAGAGAGGAGTTTTGAGAAGAAGAAGAACACCATGTGCGCGGTTTTTGAGAAGAAGAACACACCTTCAAGAAGAAGAACAACAACAACATCTTGAGAAGAAGAAGAACAACATCCAGAAGAAGAAAAAAAA	7 6
Qy	L 0	ACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCTGTTGGTCTTC ACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGTTGCTGTTGGTCTTC ACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGGAGCTTGCCTGTTGGTCTTC	03
QV	2 3	CITCAICTECTICAICCACCTICIAATITICCCACACTCCACCTCAATGCTIGGAATI 	6 7
QQ Dp	6 7	ATGCCAGCATCTTCCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTGTACTCTGT	
QY	2158	GGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATGTCCGCTCACGGCA :	2217 2238
QY	2218	CATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAAC :	2277
ογ Db	2278	ATGTTCACCTGTAACCACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACA (2337
QY	2338	CCTGCTGACATCACTGCCTGCCCTCCAGCTCAATTACTCTCTGGGCCTGGATGCT :	2397
Qy	2398	TGCAGCTTTCCTGAGGTGTCCATCGGGAACATG	2457
Qy	2458	CAGCATCGGGAAGTTGGCC	2517 2538
QY	2518 2539	AIGATCTTTGTCTTGGGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCC :	2577
ογ Dp	2578	ATCTTTGACAACTATGACCTACTGCCTCCCATGCCTTGCCTTCTTCCAATGAGACC :	2637
QY	2638	TTTGATGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTG :	2697 2718
QY	2698 2719	CAGCAGGTGGAATCGACTGCC	2757
QY	2758	CTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTA 	3 7
Oy Dp	2818	ACCGGAGGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTC	2877
Oy.	87	TGGCCCGGGGAGCGCCGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGT	93.

```
Query Match
                                                                                                                 989
                                                                                                                                  ო
                                                                                                                                                     969
                                                                                                                                                                        63
                                                                                                                                                                                           226
                                                                                                                                                                                                              123
                                                                                                                                                                                                                                 816
                                                                                                                                                                                                                                                   183
                                                                                                                                                                                                                                                                     918
                                                                                                                                                                                                                                                                                       243
                                                                                                                                                                                                                                                                                                           936
                                                                                                                                                                                                                                                                                                                             303
                                                                                                                                                                                                                                                                                                                                                966
                                                                                                                                                                                                                                                                                                                                                                  363
                                                                                                                                                                                                                                                                                                                                                                                     1056
                                                                                                                                                                                                                                                                                                                                                                                                      423
                                                                                                                                                                                                                                                                                                                                                                                                                         1116
                                                                                                                                                                                                                                                                                                                                                                                                                                           483
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          843
                                                                                                                                                                       음
                                                                                                                                                    ò
                                                                                                                                                                                                            9
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                 ò
                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٥y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                     TTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCTCGG
                                                                                                                                                                                                                                                                     TCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCT
                                                                                                                                                                                GACTACGCCATGCGGCTCATGGAGCAGATGAGCACATCAATGAGCACTCCTTCAACAAT
                                                                                                                                                                                                                                AAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTTCTAGTCGTATGGACAGCACG
                                                                                                                                                                                                                                                                                                GGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGC
                                                                                                                                                                                                                                                                                                                                      TACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTAC
                                                                                                                                                                                                                                                                                                                                                                          TTCCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGCCACAAATTCAGCTGAAGGGACC
                                                                                                                                                                                                                                                                                                                                                                                    GGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGC
                                                                                                      GAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: PURGY P.
APPLICANT: POST, S. R.
APPLICANT: POST, S. R.
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART
TITLE OF INVENTION: FAILURE
FILE REFERENCE: 220002056723
CURRENT APPLICATION UNMBER: US/09/750,240
CURRENT APPLICATION UNMBER: US 09/472,667
PRIOR FILING DATE: 1999-12-27
PRIOR FILING DATE: 1999-12-7
PRIOR FILING DATE: 1999-12-67
PRIOR FILING DATE: 1999-10-16
PRIOR FILING DATE: 1999-10-16
PRIOR FILING DATE: 1997-09-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3, Application US/09750240 Patent No. US20020103147Al GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGTGGGCACT 3570
                                                                                                                                                                                                                                                                                                                                                                                                               AAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hammon, H. K. APPLICANT: Insel, P. A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
US-09-750-240-3
                                                                                                                                                                                                                                                                                                                                                                                           3499
        2899
                           2938
                                              2959
                                                                2998
                                                                                  3019
                                                                                                       3058
                                                                                                                        3079
                                                                                                                                          3118
                                                                                                                                                             3139
                                                                                                                                                                                3178
                                                                                                                                                                                                   3199
                                                                                                                                                                                                                      3238
                                                                                                                                                                                                                                         3259
                                                                                                                                                                                                                                                           3298
                                                                                                                                                                                                                                                                             3319
                                                                                                                                                                                                                                                                                                3358
                                                                                                                                                                                                                                                                                                                  3379
                                                                                                                                                                                                                                                                                                                                     3418
                                                                                                                                                                                                                                                                                                                                                       3439
                                                                                                                                                                                                                                                                                                                                                                          3478
                                                                                                                                                                                                                                                                                                                                                                                                              3538
                                                                                                                                                                                                                                                                                                                                                                                                                                 3559
        셤
                          ŏ
                                             g
                                                                               g
                                                                                                                   q
                                                                                                                                                         8
                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                   q
                                                              ö
                                                                                                     δ
                                                                                                                                     ò
                                                                                                                                                                               ò
                                                                                                                                                                                              a
                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                         οŽ
                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                               q
```

```
ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCATGAGAATCGGCAGCAGCAGCGGCTGCTGCTGTCGGTATTGCCCCAGCACGTTGCCAT 1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATC 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTTGACAA 1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCG 1535
                                                                                                                                                                                                                                                                                                                                                                       875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1536 CATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGGACTACGAAGTGGAGCCAGG 1595
                                                                                                                                                                                                                                                                                                             815
                                                                                                                                                                                                                                                                                                                                          182
                                                                                                                                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                  935
                                                                                                                                                                                                                                                                                                                                                                                                                                                             302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          602
                                                                                                                                                                                                                                                                                122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCA 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGTGTTTTTGTATACATCGCATACACGCT 755
                                                                                                                                                                Gaps
                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                                                                                                                                                     GTCTCAGCGCCAGGCCTTTCAGGAGACCGGCAGTTACATCCAGGCCCGGCTCCACCTGCA
                                                                                                                                                                                                           CCTCCCCATCCGCATGCGGGCTGCCTCAGCGGCCTGGGGCCTCTCCACCTTGCATTT
                                                                                                                                                                                                                                                                                                                           GATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                               TAACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAAATGTGAACATGCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCATCCACACGGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATGGCAGTTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTGCTGCTGTTCCTCTGCACCACGTCATTAGCATCTGCACACACTATCCAGCAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATGATTGAGGCCATCTCGCTGGTACGTGAGGGTGTGTGAAATGTGAAACATGCGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1812;
                                                                                                                                                               ö
                                                                                                                                                               Indels
                                                                                                                                  DB 10;
                                                                                                                                                               1;
                                                                                                                                  Score 1808.4;
                                                                                                                                                             0; Mismatches
                              Version 4.0
                                                                                                                                                 Pred. No.
               13
Windows
                                                                                                                                51.0%;
99.9%;
                                                                                                                                               Best Local SIMILALLY
Matches 1809; Conservative
SOFTWARE: FASTSEQ for W. SEQ ID NO 3
LENGTH
                                                                      TYPE: DNA ORGANISM: Homo sapiens
                                                                                        ; ORGANISM: Ho
US-09-750-240-3
```

```
g
                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                         2075
                                                                                                                                                                                                                                                                                                                                                                                                 1442
                                                                                                                                                                                                                                                                                                                                                                                                                       2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2435
                                                                                                                                                                                                                                       1203 CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTGAGCCGTGCCATCGA 1262
                                                                                                                                                                                                                                                                                                                                     TGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCGGGTTTTTGCTCCACCTTCCA 1955
                                                                                                                                                                                                                                                                                       1743 TTACTCTCTGGGCCTGGATGCTCCCCTGTGTGGGGCACCATGCCCACCTGCAGCTTTCC 1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1503 GATCTGTGCTGTGTGTCTGTGTGGTTCTGTTCCCTAAGGCCCTGCAACGTCTGTGTCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HUMAN ADENYLYL
1656 GGGCGCCAGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCG
                                                                                              1023 GGCGCCAGCCAGAAAAGAGAAAAAGAAAAGCATGCTGGCCAAGCTGCAGCAGAACTG
                                                                                                                                           1083 GGCCAACTCCATGGAAGGCTGATGCCGCGATGGGTTCCTGATCGTGCTGCTTCTCTCGAC
                                                                                                                                                                                                                           CACCCAAGATGCCCTGAACCCTGAGGATGAGGTGAGTTCCTGAGCCGTGCCATCGA
                                                                                                                                                                                                                                                                                                                                                                                   1383 TGCCTGTGCCCTGTTGGTCTTCTGCTTCTGCTTCATCAGCTTCATCTAGTTTTCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCCCGGAC
                                                                                                                                                                              CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATTCCAGCAAAGACAACCGGGG
                                                                                                                                                                                       1143 CAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATGATGATCAGCAAAGACAACCGGG
                                                                                                                                                                                                                                                                                                                                                                        TGCCTGTGCCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCTAATTTTCCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTAATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAACGTCTGTCCCG
                                                                                                                                                                                                                                                                                                                        GAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTTCGGAGCCTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                  1443 CTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCTGATCACCGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATACGGAGCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTACTCTCTGGGCCTGGATGCTCCCCTGTGAGGGCACCATGCCCACCTGCAGCTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCATTGTCCGCTCACGGCCACATAGCACCGCAGTTGGCATCTTTTCCGTCCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTCCGTCCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
US-10-175-158-1
Sequence 1, Application US/10175158
Sequence 1, Publication No. US20030008371A1
GENERAL INFORMATION:
APPLICANT: Tomlinson, James
APPLICANT: Cor Therapeutics, Inc.
TITLE OF INVENTION: CLONING AND CHARACTERIZATION (
TITLE OF INVENTION: CYCLASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |||||||||| |
TGAGGTGTTC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGGTGTCC 2445
                                                                                                                                                                                                                                                                          1896
                                                                                                                                                                                                                                                                                                                        1956
                                                                                                                                                                                                                                                                                                                                             1323
                                                                                                                                                                                                                                                                                                                                                                     2016
                                                                                                                                                                                                                                                                                                                                                                                                                      2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1563
                                  1596
                                                                                                                                1716
                                                                                                                                                                             1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2436
           903
                                                                                                                                                                                                                            1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1803
                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
           g
                                  ò
                                                      g
                                                                         δ
                                                                                                    g
                                                                                                                               ò
                                                                                                                                                g
                                                                                                                                                                          ò
                                                                                                                                                                                                  g
                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                     οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

```
1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1222 CTGGCCATCGCCCTGCGCACCAACGCCCAGGACCAGTTCCTGCTGAAGCAGCTTGTCTCC 1281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          214 CGGAGGGCGGCCCAGGCAAGGCCAAGGACTGGGGCTGCGGGCAGTGGCCCTGGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            274 GAGGATACCGAGGTGACAACGACAGCGGGCGGGACGGCTGAGGTGGCGCCCCGACGCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 685 GGGTCCGGGGATGGCGGCAGCTCGGCGGACTCGGGCTCGGGCCGCGGGGCCCGGGGCCCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C---TGTCCCTGGCGCCTGCTGCCTTGCTGCTGCAGATATTCCGCTCCAAGAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGACGCTGCTGGTGCCGGTGCTGGTGCTCACAGCGGTGCTGCTGCCTTTCCAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               634 AGTAACGTGGTGCTGGGCATCCTGGCGGCAGTGCAGGTCGGGGGGCGCTTTCGCAGCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGCGCACCCTCTGCGGGCCTCTGGTGTTCTTGTATACATCGCATACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCACGCAGCGCCTCTGAGGGCATCTGGTGGACCGTGTTCTTCATCTACACCATCTACACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        334 CCCAGGAGTGGGCGATCCTGCTGGCGCCGTTTGGTGCAGTGTTCCAGTCGAAGCAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGTCGGACAAACTGGAGCGGCTGTACCAGCGCTACTTCTTCCGCCTGAACCAGGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCACCATGCTCATGGCCGTGCTGCTCGTGTGCCTGGTCATGTTGGCCTTCCACGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCCTCCCCCATCCGCATGCGGGCTGCCGTCCTCAGCGGCCTGGGCCTCCTCCACCTTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     394 CGTTCGGCCAAGCTGGAGCGCCTGTACCAGCGGTACTTTTCCAGATGAACCAGAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATGTGCTGCTGCTCTCTCCACCAACGTCATTAGCATCTGCACACACTATCCAGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGATCTTGGCCTGGCAACTTAACCGTGGTGATGCCTTCCTCTGGAAGCAGCTCGGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        911;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1703.4;
Pred. No. 0;
0; Mismatches
FILE REFERENCE: 44481-5027-01-US
CURRENT APPLICATION NUMBER: US/10/175,158
CURRENT FILING DATE: 2002-06-20
PRIOR APPLICATION NUMBER: US/09/473,716
PRIOR FILING DATE: 1999-12-29
PRIOR FILING DATE: 1998-07-01
PRIOR PLICATION NUMBER: PCT/US98/13540
PRIOR PLICATION NUMBER: 06/070,901
PRIOR FILING DATE: 1998-07-01
PRIOR FILING DATE: 1997-07-01
PRIOR FILING DATE: 1997-07-01
NUMBER OF SEQ ID NOS: 2
SOFTWARE: PATENTIN VET: 2.0
SEC ID NO 1:
                                                                                                                                                                                                                                                                                                                            ORGANISM: human type V adenylyl cyclase
                                                                                                                                                                                                                                                                                                                                                                                                                                              48.0%;
ilarity 71.3%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                        (138)..(3921)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                  ; NAME/KEY: CDS
; LOCATION: (139
US-10-175-158-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Simi
Matches 2356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     d
```

7;

п	1 3	0 н	1 0	0 1	0 1	0 1	0 1	1	0 1	0 1	0	1 0	0 1	1 8	æ 15	ω ω	മഗ
993	1053 1461	1110	117(123(129	135(141	147(153(194)	1590	165(171(177(1818	1878	1938 235	1998 241!
GTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTG	CAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGGTCGGTATTGCCCCAGCACGTTGCC	ATGGAGATGAAAGACATCAACACAAAAAAGAGACATGTTCCACAAGATCTAC	ATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTG	GCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGAGCTCTTTGCCCGGTTT	GACAAGCTGGGTGGGGAGAATCACTGCCTGAGGATCAAGATCTTGGGGGACTGTTACTAC	TGTGTGTCAGGGCTGCCGGAGGCCCGGCCGACCATGCCCACTGCTGTGGAGATGGGG 	GTAGACATGATTGAGGCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAAACATG 	CGCGTGGGCATCCACAGCGGGCGCTGCACTGCGGCGTCCTTGGCTTGCGAAATGGCAG 	TTCGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACTGGAAGCAGGAAGCCGGGCT 	GGCCGCATCCACATCACTCGGCCAACACTGCAGTACCTGAACGGGGACTACGAAGTGGAG 	CCAGGCCGTGGTGGCAAGGCGTACCTCAAGGAGCAGCACATTGAGACTTTCCTC	ATCCTGGGCGCCAGCCAGAAACGGAAAGAGAAAGGCATGCTGGCCAAGCTGCAGGGGGGGG	ACTCGGGCCAACTCCATGGAAGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTTCTCC		AGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTC	CTGAGCCGTGCCATCGATGCCCGCGGCAGCATTGATCAGCTGCGGAAGAACGACCATGTGCGCCGG	TTTTTCCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCC
934	994	1054	1111	1171 1582	1231	1291	1351 1762	1411	1471 1882	1531	1591	1651 2062	1711	1771	1819	1879 2296	1939 2356
Qy Db	Qy	Qy Db	Qy	Oy Db	Qy Dp	Qy Db	Oy Db	Oy Dp	Qy Db	Oy Op	Oy Dp	Qy	Qy Db	Qy Db	Qy	Qy Db	QZ

2358 2775 2892 3309 2952 2475 2655 2715 2412 2472 2895 2532 2955 2592 3012 2652 3069 2712 3189 2832 3012 3072 2298 3489 CAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCC 3132 ATCACCATGGGCCCACTCCATATTCATGCTCAGCTTCTACCTGACCTGTTCCTGCTG CCCTGGCCCAACTGCAACTTCCCCGAGTACTTCACCTACAGCGTGCTGAGCCTGGTG CGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAG CTTCTAATTTTCCCACACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTG CTGCTAATCACCGTGCTGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCC CTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATC TTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACC ACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTG GCCAGCTCTGTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTG GGGCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTAT GACCTACTGCTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGAC TGTCCAGCTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTT CCTGAGCATGCAACCAAGGTGGCATTGAAGGTGGTGACGCCCATCATCATCTCAGTCTTT TGGAAACTACAGGCAACAGGGGAAAAAGAGAGAGATGGAGGAGCTACAGGCATACAACCGG 2833 AGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCCACTTCCTGGCCCGGGAGCGC CGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCGTGTTATGTTTGCCTCCATT GCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTG CGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGG CACCTGCAGCAG-----CTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGC 2119 1999 2416 2059 2476 2536 2179 2596 2239 2656 2299 2359 2776 2413 2836 2473 2896 2533 2956 2593 3013 2653 3070 2713 3130 2773 3190 3250 2893 3310 2953 3370 3013 3073 g QQ Db DP OY DP 90 AQ QY Db Oy Db 셤 Oy Db δ δ QY Db δ g δ g δ 60/235,834

```
RETLING DATE: 2000-09-27

RETLING DATE: 2000-09-21

RETLING DATE: 2000-09-30

RETLING DATE: 2000-08-30

RETLING DATE: 2000-08-30

RETLING DATE: 2000-09-29

RETLING DATE: 2000-10-20

RETLING DATE: 2000-09-29

RETLING DATE: 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R FILING DATE: 2000-09-08

R APPLICATION NUMBER: 60/229,509

R PILING DATE: 2000-09-05

R FILING DATE: 2000-09-05

R FILING DATE: 2000-09-29

R FILING DATE: 2000-09-29

R FILING DATE: 2000-09-29

R FILING DATE: 2000-10-02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R FILING DATE: 2000-09-29
R APPLICATION NUMBER: 60/236,802
R FILING DATE: 2000-10-02
R PILING DATE: 2000-10-02
R PILING DATE: 2000-10-02
R APPLICATION NUMBER: 60/237,040
R PILING DATE: 2000-10-02
R APPLICATION NUMBER: 60/240,960
R FILING DATE: 2000-10-02
R APPLICATION NUMBER: 60/240,960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 2000-10-13
APPLICATION NUMBER: 60/239,937
FILING DATE: 2000-10-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 2000-10-02
APPLICATION NUMBER: 60/236,370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 2000-10-20
APPLICATION NUMBER: 60/239,935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/241,787
FILING DATE: 2000-10-20
FILING DATE: 2000-12-08 APPLICATION NUMBER: 60/
PRESENTANT OF PRINCE PRODUCE P
19490 CAGCTGGAGAAGATCAAGACCATCGGCAGCACCTACATGCTGCCTCCGGCCTCACAACGAC 3549
                                                                                                            3550 TCTACCTACGACAAGGGGGGCAAGACCCACATCAAGGCACTGGCCGACTTGCCATGAAG 3609
                                                                                                                                                                                                                         3193 CTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATT 3252
                                                                                                                                                                                                                                                                                                                                                                                                                ATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGT 3432
                                                                                                                                                                                                                                                                                                                                                                                                                                             3253 GGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGAC
                                                                             3133 AGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-989-442-23
Sequence 23, Application US/0989442
Publication No. US20030013649A1
GENERAL INFORMATION:
APPLICANT: ROSEN et al.
TITLE OF INVENTION: Nucleic Acids, Proteins,
FILE REFERENCE: PJZ08
CURRENT APPLICATION NUMBER: US/09/989,442
CURRENT FILING DATE: 2001-11-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/179, 065
PRIOR FILING DATE: 2000-01-31
PRIOR PELING DATE: 2000-01-31
PRIOR PELING DATE: 2000-02-04
PRIOR PELING DATE: 2000-02-04
PRIOR PELING DATE: 2000-06-28
PRIOR APPLICATION NUMBER: 60/214, 886
PRIOR APPLICATION NUMBER: 60/217, 487
PRIOR PELING DATE: 2000-07-11
PRIOR PELING DATE: 2000-07-12
PRIOR PELING DATE: 2000-09-14
PRIOR PILING DATE: 2000-09-14
PRIOR PILING DATE: 2000-09-14
PRIOR PELING DATE: 2000-09-14
PRIOR PELING DATE: 2000-07-26
PRIOR PELING DATE: 2000-07-26
PRIOR PELING DATE: 2000-07-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: 60/225,447
PRIOR FILING DATE: 2000-08-14
PRIOR APPLICATION NUMBER: 60/218,290
PRIOR FILING DATE: 2000-07-14
PRIOR APPLICATION NUMBER: 60/225,757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 2000-08-22
APPLICATION WUMBER: 60/216,647
APPLICATION DATE: 2000-07-07
APPLICATION NUMBER: 60/225,267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 2000-08-14
APPLICATION NUMBER: 60/226,868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/225,270 FILING DATE: 2000-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 2000-08-14
APPLICATION NUMBER: 60/251,869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/216,880 FILING DATE: 2000-07-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3910 CCC 3912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCC 3495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR PRIOR PRIOR PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 7
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                             à
                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
```

us-09-750-240-5.rnpb

PRIOR APPLICATION NUMBER: 60/246, 474

PRIOR APPLICATION NUMBER: 60/246, 532

PRIOR FILING DARE: 2000-11-08

PRIOR FILING DARE: 2000-11-17

PRIOR PELING DARE: 2000-11-17

PRIOR PELING DARE: 2000-11-17

PRIOR PELING DARE: 2000-08-14

PRIOR FILING DARE: 2000-08-14

PRIOR FILING DARE: 2000-08-12

PRIOR PELICATION NUMBER: 60/225, 759

PRIOR PELING DARE: 2000-08-14

PRIOR PELING DARE: 2000-09-17

PRIOR PELING DARE: 2000-09-17

PRIOR PELING DARE: 2000-09-17

PRIOR PELING DARE: 2000-19-16

PRIOR PELING DARE: 2000-19-17

PRIOR PELING DARE: 2000-11-17

PRIOR PELING DARE: 2000-09-08

PRIOR PE

3031 2851 2732 ATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGCAACAG 2791 2852 TGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGAACTCTACT 2911 GCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGGCTCATGGAGCAGATGAAGC 3211 3032 TCGCTGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGGCAGCTGGAAAAGATCAAGA 3091 ACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCAG 3271 3272 TCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAACACAGTGA 3331 009 3392 IGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGA 3451 1 ACGCCCAGCAGGTGGAGTCCACTGCCGCCTCGACTTCCTCTGGAGACTGCAGGCGCACAG 60 2912 ATCAGTCGTGTGTGTGTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCT 2972 ATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGGCTGCTCAACGAGATCA ö Length 837; Indels 3452 AGGCCAAGGGGGAGATGACCACCTACTTCCTCAATGGGGGCCCC 3495 AGGCCAAAGGCGAGATGATGATGACCTACTTCCTCAATGGAGGCCC / Match 16.5%; Score 586; DB 9; I Local Similarity 85.3%; Pred. No. 1.7e-135; Res 652; Conservative 1; Mismatches 111; PRIOR FILING DATE: 2000-09-14
PRIOR APPLICATION NUMBER: 60/241,808
PRIOR PELING DATE: 2000-10-20
PRIOR PELING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-20
PRIOR FILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/241,221
PRIOR APPLICATION NUMBER: 60/246,475
PRIOR PELING DATE: 2000-10-08
PRIOR FILING DATE: 2000-10-08
PRIOR FILING DATE: 2000-09-08
PRIOR FILING DATE: 2000-09-08
PRIOR FILING DATE: 2000-09-08 Query Match Best Loca Matches 661 3152 721 δ g d a q δ q δ g 셤 g 원 οχ ò δ δ ò ò ò a ò g δ

ö

```
611 TGTACCAGGTGCTGCCTGCCAACACGTACCAGCTGGAGTGCCGGGGCGTGGTCAAGGTCA 670
                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Rosen et al. TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies
                                                                                                                                                                        3452 AGGGCAAGGGGGAGATGACCACCTACTTCCTCAATGGGGGCCCC 3495
                                                                                                                                                                                                  671 AGGGCAAAGGCGAGATGATGATCTTCCTCAATGGAGGCCC 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR PREFICATION NUMBER: US/09/989,442
CURRENT FILING DATE: 2001-11-21
PRIOR APPLICATION NUMBER: 06/179,065
PRIOR PELILAGE DATE: 2000-01-31
PRIOR PELILAGE DATE: 2000-01-31
PRIOR PELILAGE DATE: 2000-02-04
PRIOR PELILAGE DATE: 2000-06-28
PRIOR PELILAGE DATE: 2000-06-28
PRIOR PELILAGE DATE: 2000-06-28
PRIOR PELILAGE DATE: 2000-06-14
PRIOR PELILAGE DATE: 2000-07-11
PRIOR PELILAGE DATE: 2000-07-11
PRIOR PELILAGE DATE: 2000-07-14
PRIOR PELILAGE DATE: 2000-08-14
PRIOR PELILAGE DATE: 2000-09-27
PRIOR PELILAGE DATE: 2000-09-27
PRIOR PELILAGE DATE: 2000-09-21
PRIOR PELILAGE DATE: 2000-09-29
                                                                                                                                                                                                                                                                                                                                           Sequence 69, Application US/09989442 Publication No. US20030013649A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILE REFERENCE: PJZ08
                                                                                                                                                                                                                                                                                                 RESULT 9
US-09-989-442-69
                                                                        3392
                                                                                                                                                                                                                 QQ
                                                                        ŏ
                                                                                                                       g
                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCCCAATGATGAACTCTACT 2911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2792 GGGAAAAAGAGAGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCATAACATTC 2851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2912 ATCAGTCGTGTGAGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCT 2971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3032 TCGCTGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGGCAGCTGGAAAAGATCAAGA 3091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3092 CGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCAGGTGG 3151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3152 GCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGGCTCATGGAGCAGATGAAGC 3211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCAG 3271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3272 TCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGGAACACAGTGA 3331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3332 ATGICICIAGICGIAIGGACAGCACGGGGGICCCCGACCGAAICCAGGIGACCACGGACC 3391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2972 ATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAACGAGGATCA 3031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 TGCCCAAGGACGTGGCCCCTCACTTCCTGGCCCGCAGGCGCGCAATGATGACTTACT 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         131 ATCAGTCCTGTGAGTGTGTGGCGGTCATGTTCGCCTCCATCGCCAACTTCTCCGAGTTCT 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         431 ACATCAATGAGCACTCCTTCAACAACTTCCAGATGAAGATCGGGCTCAACATCGGCCCCG 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12 GRAGWAAAAAGAGGAGATGAAGGTGCA-GCCTACAACCGGCGGCTGCTGCACACATCC 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 915;
                                                                                                               APPLICANT: Rosen et al.

TITLE OF INVENTION: Nucleic Acids, Proteins, and Antibodies FILE REFERENCE: PT232
CURRENT APPLICATION NUMBER: US/09/764,868
CURRENT FILING DATE: 2001-01-17
Prior application data removed - refer to PALM or file wrapper NUMBER: OF SEQ ID NOS: 1510
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14.9%; Score 529.6; DB 9;
85.2%; Pred. No. 1.6e-121;
tive 2; Mismatches 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: (878)

OTHER INFORMATION: n equals a,t,g, or c
NAME/KEY: SITE
LOCATION: (883)
OTHER INFORMATION: n equals a,t,g, or c
US-09-764-868-181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            υ
                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: SITE
LOCATION: (815)
OTHER INFORMATION: n equals a,t,g, or
NAME/KEY: SITE
LOCATION: (852)
OTHER INFORMATION: n equals a,t,g, or
NAME/KEY: SITE
                                              Sequence 181, Application US/09764868
Patent No. US20020168711A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 85.2
Matches 600; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens
                                                                                               GENERAL INFORMATION
                       09-764-868-181
                                                                                                                                                                                                                                                                                                                                                LENGTH: 915
                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
```

```
PRIOR APPLICATION NUMBER: 60/236, 327
PRIOR FILING DATE: 2000-09-29
PRIOR FILING DATE: 2000-09-29
PRIOR FILING DATE: 2000-10-20
PRIOR PELICATION NUMBER: 60/244, 617
PRIOR APPLICATION NUMBER: 60/226, 268
PRIOR APPLICATION NUMBER: 60/226, 268
PRIOR APPLICATION NUMBER: 60/226, 268
PRIOR PELING DATE: 2000-09-19
PRIOR PILING DATE: 2000-09-29
PRIOR PILING DATE: 2000-12-08
PRIOR APPLICATION NUMBER: 60/229, 344
PRIOR APPLICATION NUMBER: 60/229, 344
PRIOR PILING DATE: 2000-09-01
PRIOR PILING DATE: 2000-09-05
PRIOR PILING DATE: 2000-09-09
PRIOR PILING DATE: 2000-10-02
PRIOR PILING DATE: 2000-10-03
PRIOR PILIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR FILING DATE: 2000-10-13
PRIOR APPLICATION NUMBER: 60/239,937
PRIOR APPLICATION NUMBER: 60/239,937
PRIOR APPLICATION NUMBER: 60/241,787
PRIOR PILING DATE: 2000-10-20
PRIOR APPLICATION NUMBER: 60/246,474
PRIOR APPLICATION NUMBER: 60/246,532
PRIOR APPLICATION NUMBER: 60/249,216
PRIOR FILING DATE: 2000-11-08
PRIOR PAPLICATION NUMBER: 60/249,216
PRIOR FILING DATE: 2000-11-17
PRIOR PAPLICATION NUMBER: 60/249,210
PRIOR FILING DATE: 2000-11-17
PRIOR APPLICATION NUMBER: 60/249,210
PRIOR FILING DATE: 2000-11-17
PRIOR PAPLICATION NUMBER: 60/226,681
PRIOR FILING DATE: 2000-11-17
PRIOR PAPLICATION NUMBER: 60/226,759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: 2000-08-22
PRIOR APPLICATION NUMBER: 60/225,759
PRIOR FILING DATE: 2000-08-14
PRIOR APPLICATION NUMBER: 60/225,213
PRIOR FILING DATE: 2000-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 2000-08-14
APPLICATION NUMBER: 60/235,836
FILING DATE: 2000-09-27
```

PRIOR FILING DATE: 2000-09-06
PRIOR FILING DATE: 2000-09-06
PRIOR APPLICATION NUMBER: 60/215,135
PRIOR PELICATION NUMBER: 60/225,266
PRIOR PILING DATE: 2000-08-14
PRIOR PLILING DATE: 2000-11-17
PRIOR PELICATION NUMBER: 60/249,218
PRIOR PELICATION NUMBER: 60/249,218
PRIOR PELICATION NUMBER: 60/249,218
PRIOR PELICATION NUMBER: 60/249,218
PRIOR PELICATION NUMBER: 60/249,217
PRIOR PELICATION NUMBER: 60/249,217
PRIOR PELICATION NUMBER: 60/249,217
PRIOR PELICATION NUMBER: 60/249,247
PRIOR APPLICATION NUMBER: 60/249,247
PRIOR APPLICATION NUMBER: 60/231,440
PRIOR APPLICATION NUMBER: 60/231,440
PRIOR APPLICATION NUMBER: 60/231,440
PRIOR APPLICATION NUMBER: 60/231,440
PRIOR PELICATION NUMBER: 60/231,440
PRIOR PELICATION NUMBER: 60/231,440
PRIOR PELICATION NUMBER: 60/231,440
PRIOR PELICATION NUMBER: 60/231,410
PRIOR PELICATION NUMBER: 60/231,411
PRIOR PELIC APPLICATION NUMBER: 60/230,438

ä

Gaps

;

Length 915; Indels

14.9%; Score 529.6; DB 9; 85.2%; Pred. No. 1.6e-121; ive 2; Mismatches 101;

Query Match 14.9 Best Local Similarity 85.2 Matches 600; Conservative

```
US-10-121-911-2
                       Query Match
                                                                                                                                                                                                609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1287
                                                                                    q
                                                                                                         ò
                                                                                                                              g
                                                                                                                                                    á
                                                                                                                                                                       셤
                                                                                                                                                                                               õ
                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                   3151
                                                                                     2971
                                                                                                                                                                                                                                                            3211
                                                                                                                                                                                                                                                                                                   3212 ACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCAG 3271
                                                                                                                                                                                                                                                                                                                                                                                         3391
                                                                                                                                                                                                                                                                                                                                                                                                                               TGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGA 3451
                                                                                                                            2972 ATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGGCTGCTCAACGAGATCA 3031
2792 GGGAAAAAGAGGAGATGGAGGAGGTACAGGCATACAACCGGAGGCTGCTGCATAACATTC 2851
                                                                                                                                                                       3032 TCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGA 3091
                                                                                                                                                                                                                                                                                                                                             3272 TCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAACACAGTGA 3331
                                                                                                                                                                                                                550
                                                                                                                                                                                                                                                                                                                                                                                                                                           70
           12 GRAGWAAAGAGGAGGAGGAGCTGCA-GCCTACAACCGGCGGCTGCTGCACAACCATCC
                                                                                                                                                                                   2852 IGCCCAAGGACGIGGCGGCCCACTICCIGGCCGGGAGCGCCGCAAIGAIGAACTCIACI
                                                                                   2912 ATCAGTGTGTGTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCT
                                                                                                                                                                                                                                                           GCCGCTCCCACATCACTGCCCTGGCTGACTACGCCCATGCGGCTCATGGAGCAGATGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                           551 ACGTGGCCAGCCGCATGGACAGCACCGGTGTACCCGACCGCATCCAGGTCACCACAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3452 AGGCCAAGGGGGAGATGACCACCTACTTCCTCAATGGGGGCCCC 3495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/10121911
Patent No. US20020164632a1
GENERAL INFORMATION:
APPLICANT: Kapeller-Libermann, Rosana
TITLE OF INVENTION: 21529, A NOVEL ADENYLATE CYCLASE
FILE REFERENCE: 5800-47
CURRENT APPLICATION NUMBER: US/10/121,911
CURRENT FILING DATE: 2002-04-12
PRIOR APPLICATION NUMBER: US/09/412,210
FRIOR APPLICATION NUMBER: US/09/412,210
NUMBER OF SEQ ID NOS: 2 'O'S
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: (0)...(0)
OTHER INFORMITON: 21529 adenylate cyclase
LOCATION: (247)...(3480)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
US-10-121-911-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                 3092
                                                                                                                                                                                                                                                         3152
                                                                                                                                                                                                                                                                                                                       431
                                                                                                                                                                                                                                                                                                                                                                                      3332
                                                                                                                                                                                                                                                                                                                                                                                                                                3392
                                                                                                                                                                                                                                                                                                                                                                                                                                                    611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              671
ò
                    a
                                                                                                      <del>a</del>
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                         à
                                                            g
                                                                                  ò
                                                                                                                            ò
                                                                                                                                              g
                                                                                                                                                                     ò
                                                                                                                                                                                         g
                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                             å
                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                 임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
```

```
CCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCTGAATGAGCTCTTTGCCCG 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGGGTAGACATGATTGAGGCCCATCTCGCTGGTACGTGAGGTGACAGGTGTGAATGTGAA 1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGACCCGCAGTTACATCCAGGCCCGGCTCCACCTGCAGCATGAGAATCGGCAGCAGGA 1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1017 GCGGCTGCTGCTGTCGGTATTGCCCCAGCAGTTGCCATGGAGATGAAAGAAGAACATCAA 1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGGCCAGCGAGTGTTCCCCTAAGGAGCTGGTGCTCATGCTCAATGAGCTCTTTGGCAA 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1278 GGGCCTGGACATGTGCCGGGCCATCAGGAAACTGCGGGCAGCCACTGGCGTGGACATCAA 1337
                                                                                                                                                                                                                                                                                                                                                                                    728
                                                                                                                                                     548
                                                                                                                                                                         TGTGCTGTGCGCCTGCGCGCTTCTCGCTGCTGCGCCTCCCTTCCCGGCAGCAGCA 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        926
                                                                                                                                                                                                                              GTTGGCCTGTGCCGCCCCCTGTTCGTGGGGCTCATGGTGGTGTGTAACCGGCATAGCTT 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCTTTGTATACATCGCATACACGCTCCTCCCCATCCGCATGCGGGCTGCCGTCCTCAG 788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     435 CCAGATGAACCAGAGCAGCCTGACGCTGCTGGTGGCGGTGCTGGTGCTGCTCCTCACAGCGGT 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          798 GAACGIGGCAGGAGIGIACCACAAGGCGCTGAIGGAGCGCGCCCIGCGGGCCACGIICCG 857
                                                                                                                                                                                                                                                                                                                                GCT----GCTGGCTTTCCAAGCCGCACCGCCCCCCCTCAG--CCTGCCTATGTGGCACT
                                                                                                 CCGCCAGGACTCCATGTGGGTGGTGAGTAACGTGGTGCTGGGCCATCCTGGCGGCAGTGCA
                                                                                                                                                                                                                                                                                                                                                                                    GGTCGGGGGCCCTTTCGCAGACCCGCGCAGCCCCTCTGCGGGCCTCTGGTGCCCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   789 CGGCCTGGGCCTCTCCACCTTGCATTTGATCTTGGCCTGGCAA------CTTAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----AAAAAGAAGACATGTTCCACAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCACGCCTTCCTGTTCACCGGGGGGGGTGTGAGGGCCCTGGGACCAGGTGTCTATTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         678 GGGCCTCGCCTCCTCACTCTCGCATCTGCTGGTCCTCGGGCTGTATCTTGGGCCCACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGGTGATGCCTTCCTCTG--GAAGCAGCTCGGTGCCAATGTGCTGCTGTTCCTCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      897 CAACGICATTAGCATCIGCACACATATCCAGCAGAGGIGICTCAGCGCCAGGCCTTICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3518;
Score 505.2; DB 9;
Pred. No. 3.4e-115;
0; Mismatches 1488;
14.2%;
50.0%;
                                     Conservative
                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1077 CACAA----
                   Best Local Sin
Matches 1560;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1218
                                                                                                                                                     495
                                                                                                                                                                                                                                549
                                                                                                                                                                                                                                                                  438
                                                                                                                                                                                                                                                                                                                                                                                    699
                                                                                                                                                                                                                                                                                                                                                                                                                        558
                                                                                                                                                                                                                                                                                                                                                                                                                                                           729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1347
```

2303 1706 1766 1697 2003 2063 2183 2114 2363 2423 1457 1757 1997 2057 2174 2234 2354 2483 2294 CATGCGCGTGGGCATCCACAGCGGCGCGTGCACTGCGGCGTCCTTGGCTTGCGGAAATG ACCAGGCGAGTGCACATCACAGGGCTACCTGGCCTGCTGGCAGTGCTGT TCTGGTCATCGATCCACGGCAGAGGAGGAGGATGAGAAGGCCACTGCAGGAGGCTTGCT CTGGGGGGGCAGCCAACTTTGCCCACCTGAGCCACGCGAGACAGCCCTGTGTCCACCTC GCAGTTCGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGAAGCAGGAAGCCG GGCTGGCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGAAGT GGAGCCAGGCCGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCACATTGAGACTTT CCTCATCCTGGGCGCCAGAAACGGAAAGAGGAGAAAGGCATGCTGGCCAAGCTGCA GCGGACTCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTCCTGATCGTGCCTT GTCCTCGCTTGAGGGCCTCAAGATGCGTCCATCACTGCTGATGACCCGTTACCTGGAGTC CTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCCATTGATGATTCCAGCAAAGA CAACCGGGCCACCCAAGATGCCCTG - - AACCCTGAGGATGAGGTGGA - TGAGTTCCTGAG CACCCCTCTCCCGGAGAAGACCCTGGCTTCCTTCAGCACCCAGTGGAGCCTGGATCGGAG CCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTTTT CCGTACCCCCCGGGGACTAGATGAACTGGACACCGGGGATGCCAAGTTCTTCCAGGT GCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGCTT CATTGAGCAGCTCGAGAAACAGTGGAAGCAGTCGAAGGACTTCAACCCACTGAC CGGAGCCTACGTTGCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTTCT ACTGTACTTCAGAGAGAAGGAGATGGAGAAAGAGTACCGACTCTCTGCAATCCCGGCCTT AATITICCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGCT AATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCA AGTGACAAACAGGCCCCCAGCTCTGGCCATCACG---TATAGCATCACTTTCCTCCTCTT ACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGCAGTTGGCATCTTTTC CGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCAT CAAGATGCTGCACTGGCTGCCTGCCTGGCCTGGTGGCCACACGACCAGGACTGAG AATAGCCTTGGGCACCGCCACCATCCTCGTTTTGCCATGGCCATTACCAGCCTGTT GCAGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCAC CITCITCCCAACATCATCAGACTGCCCTTTCCAAGCTCCCAATGTGTCTCCTCCATGATTTC CTGCAGCTTTCCTGAGGTGTCCCATCGGGAACATGCTGCTGAGTCTCTTGGCCCAGCTCTGT 1944 1998 1518 1578 1758 1884 1818 1878 2004 1938 2184 2244 2175 1407 1338 1467 1398 1527 1458 1587 1647 1707 1638 1767 1698 1827 2064 2124 2058 2115 2304 2235 2295 2355 2364 2424 g Ω QQ Óλ δ δ Ω ò Ω οχ g οy OY Db δ QQ QY Db 97 Db S S δy g OY Db ò qq g οy

3245 3425 3185 3305 3365 2783 3083 3314 3434 2654 2774 3074 TCTCTACCACCAGTCCTATGAATGCGTTTGTGTCTCTCTTCGCCTCAGTCCCAGACTTCAA GCGAGIGGGGITGAACCATGGACCCGTAGTAGCTGAGTTATTGGGCCCCAGAAGCCGCA ATATGACATTGGGGCAACACAGTGAACGTGGACGCCGCCGATGGAGAGTACAGGAGTCCT CTACAGCCGGGGTGTCATCAAGGTGAAAGGCAAAGGCCAACTCTGCACCTCTCTGAA CTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGCTCATCTA GCTGCTGCTGCTGCTGTGGCTGGCGGCATCCTGCTCCTCTTCCTGCACTCCCATGC TGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGC GTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACA 2775 GAACGTGCTCCCTGCACGTGGCCCCCCAGTTCATTGGCCAGAACCGGCGCAACGAGGA ACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTC ------CTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGC CATGCGCCTCATGGAGCAGATGAGCACATCAATGAGCACTCCTTCAACAATTTCCAGAT GTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACGGGGGTCCC CGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCT GGAGTGTCGAGGGTGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTACTTCCTCAA CTGCTGCACGCTGGGCTTCCTCTCCTGCTCCTCTTTCTGCACATGAGCTTCGAGCTGGA TTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCT CTGGCTGTCGGAATGCCTCATCGTCCGCCTCTATCTGGGCCCCTTGGACTCCAGGCCCGG AGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCT GGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTA TAACATTCTGCCCAAGGACGTGGCGGCCCCACTTCCTGGCCCGGGAGCGCCCGCAATGATGA TGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAA CGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGGGGGGTTCCGGCAGCTGGAAAA GATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCAC----GAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGGCTCGGAAGCCACA 2835 3195 3255 3375 2604 2664 2595 2724 2655 2844 2895 2955 3015 3075 3135 3246 3366 3315 3426 2484 2415 2544 2475 2535 2784 2715 2964 3024 3084 3186 2904 3138 3306 셤 ò 셤 οy qq Q qq oy Dp P P OY Db Qy Db oy ob oy g oy Db QY Db 셤 ò à QY Db δý g

RESULT 11 US-09-925-297-352

[;] Sequence 352, Application US/09925297 ; Patent No. US20020081659A1

```
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCACCTGCAGCATGAGAATCGGCAGCAGGAGCGGCTGCTGCTGTCGGTATTGCCCCCAGCA 1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAACACTGCAGTACCTGAACGG 1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGGGACTGTTACTACTGTGTGTGAGGGCTGCCGGAGGCCCGGGCCGACCATGCCCACTG 1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTGTGGGAGATGGGGGTAGACATGAGGCCATCTCGCTGGTACGTGAGGTGACAGG 1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTGCGGAAATGGCAGTTCGATGTGTGGTCCAATGATGTGACCCTGGCCAACCACATGGA 1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTTGCCATGGAGATGAAAGAAGACATCAACACA-------AAAAAAAGAAGACAT 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1095 GITCCACAAGATCTACATACAGAAGCATGACAATGTCAGCATCCTGTTTGCAGACATTGA 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCTTCACCAGCCTGGCATCCCAGTGCACTGCGCAGGAGCTGGTCATGACCCTGAATGA 1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTCTTTGCCCGGTTTGACAAGCTGGCTGCGGAGAATCACTGCCTGAGGATCAAGATCTT 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACCTGGAAGAGAGAGAGAGAGAGAGAACCTCATGCTTTCCATCCTGCCCAAGCA 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       927 AGCAGAGGTGTCTCAGCGCCAGGCCTTTCAGGAGACCCGCAGTTACATCCAGGCCCGGCT 986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         34 AACAGACCGCAAGCACCGCAAGGCCTTCCTGGAGGCCCGCCAGTCGCTGGAGGTGAAGAT 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACTGGGGTGGACATGCGTGTGGGGGTGCACACGGCACCTGCTGCTGGGGGGCGTCCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGAAGCGCTGGCAGTACGACGTGGTGGACGACTGATGTCACTGTAGCCAACAAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 100;
                                                                                                                                                                                                                                                                                                                                                                                   DB 10; Length 2601;
                      Nucleic Acids, Proteins and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                 Score 395.8; DB 10;
Pred. No. 3.8e-88;
1; Mismatches 1143;
TITLE OF INVENTION: Nucleic Acids, Proteins FILE REFERENCE: PA105 CURRENT APPLICATION NUCLEIC ACIDS, Proteins CURRENT APPLICATION NUMBER: US/09/925,297 CURRENT FILING DATE: 2001-08-10 PRIOR APPLICATION NUMBER: PCT/US00/05989 PRIOR PILING DATE: 2000-03-08 PRIOR PILING DATE: 1999-03-12 PRIOR FILING DATE: 1999-03-12 SEQ ID NOS: 928 SOFTWARE: PATENTIN Ver. 2.0
                                                                                                                                                                                                                                                                                           O
                                                                                                                                                                                                                                                     NAME/KEY: misc feature

LOCATION: (2520)

OTHER INFORMATION: n equals a,t,g, or
NAME/KEY: misc feature
LOCATION: (2572)

COTHER INFORMATION: n equals a,t,g, or
US-09-925-297-352
                                                                                                                                                                                                                                                                                                                                                                               Query Match
11.2%;
Best Local Similarity 51.1%;
Matches 1301; Conservative
                                                                                                                                                                                                           TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                           LENGTH: 2601
                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             634
                                                                                                                                                                                                                                                                                                                                                                                                                                             å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ογ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ó
```

2464 2584 AGTTCCTGAGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGC 1933 ACCCACGCCGGAGGCTGCGCCTGCAGGACCTGGCTGACCGAGTGGTGGATGCCTCTGAAG 1040 1041 ATGAGCACGAGCTCAACCAGCTGCTCAACGAGGCCCTGCTTGAGCGAGAGTCCGCCCAAG 1100 TAGTAAAGAAGAGAAACACCTTCCTCTTGTCCATGCGGTTCATGGACCCCGAGATGGAA 1160 1221 TCCTGCTCTGCACGCCCTGGTCGAGATACTCATCGACCCCTGGCTAATGACAAACTATG 1280 1281 reaccricargeregeseagaricrecrecrearcrearcraterecrescrecreseres 1340 1401 GCTGGGCCAGGAACACCTGGGCCATGCTCGCCATCTTCATCCTGGTGATGGCAAATGTCG 1460 1575 GGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACGCGTACCTCAAGGAGCAGCA 1634 TGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGCTGATGCCGCGATGGGTTC 1753 CTGATCGTGCCTTCTCCCGGACCAAGGACTCCAAGGCCTTCCGCCAGATGGGCATTGATG 1813 1814 ATTCCAGCAAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATG 1873 1341 TCTTTCCCCGGGCCTTTCCTAAGAAGCTTGTGGCCTTCTCAACTTGGATTGACCGGACCC 1400 1461 TGGACATGSTCAGCTGTCTCCAGTACTACACGGGACCCAGCAATGCAACGGCAGGGATGG 1520 1521 AAACGGAGGCAGCTGCCTGGAGAAC---CCCAAGTATTACAACTATGTGGCCGTGCTGT 1577 CCCTCATCGCCACCATCATGCTGGTGCAGGTCAGCCACATGGTGAAGCTCACGCTCATGC 1637 TGCTCGTCGCAGGCGCCGTGGCCACCATCAACCTCTATGCCTGGCGTCCCGTCTTTGATG 1697 AATACGACCACAAGCGTTTTCGGGAGCACGACTTACCTATGGTGGCCTTAGAGCAGATGC 1757 TICCAATGAGACCTITGATGGGCTGGACTGTCCAGCTGCAGGGAGGGTGGCCCTCAAATA 2684 1635 CATTGAGACTTTCCTCATCCTGGGCGCC-AGCCAGAAACGGAAAGAGGCATGC 1991 TGGATCCCCGCTTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCT TCCTGCT-----GCTGCTAATCACCGTGCTGATCTGTGCTGTACTCCTGTGGTTCTC CCGCAGTTGGCATCTTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCA GCCGGTTTTTGCTCACC - - - TTCCAGAGAGGATTTTGAGAAGAAGTACTCCCGGAAGG 2051 TCATCCAGCTTCTAATTTTCCCACCTCCACCCTGATGCTTGGGATTTATGCCAGCATCT TGTTCCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCA 2285 CCTGTAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTG 2345 ACATCACTGCCTGCCACCTGCAGCTCAATTACTCTGGGCCTGGATGCTCCCCTGT GTGAGGGCACCATGCCCACCTGCAGCTTTCCTGAGGTGTCCCATCGGGAACATGCTGCTGA GTCTCTTGGCCAGCTCTGTTCTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCT TTGTCTTGGGGCCTCATCTATTTGGTGCTGCTTCTGCTGGGTCCCCCCAGCCGCCATCTTTG --- GGCTTC ACAACTATGACCTACTGCTTGGCGTCCATGGCTT--1694 1754 2625 694 754 868 981 1101 2111 2165 2225 2405 2465 2525 2585 g a Вþ g ŏ g δ 셤 ŏ Q à 음 g δy ŏ g à q δ ŏ Op δ g g οy g 셤 g ď ò ò ò ŏ δý g ŏ

```
61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
1816 CTCTATGACGGTGATGGTGTTCCTCATGATGCTCAGCTTCTACTACTTCTCCCGCCACGT 1875
                                                                                                                                              1876 AGAAAAACTGGCACGGACACTTTTCTTGTGGAAGATTGAGGTCCACGACCAGAAGGAACG 1935
                                                                                                                                                                                                     GCCGCCCCACTTCCTGGCCCCGGAGCGCCCCAATGATGAACTCTACTATCAGTCGTGTGA 2924
                                                                                                                                                                                                                                                                                                                                  2056 TGAGATTGGAGTCATGTTTGCCTCCCTGCCCAACTTTGCTGACTTCTACACAGAGGAGAG 2115
                                                                                                                                                                                                                                                                                                                                                                                2985 GGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGA 3044
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3045 TGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCAC 3104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2176 CTCTCTCCTGGACAATCCCAAGTTCCGGGTGATCACCAAGATCAAAACCATTGGCAGCAC 2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2236 GTATATGGCGGCTTCAGGAGTCACCCCCGATGTCAACACCAATGGCTTTGCCAGCTCCAA 2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3186 CATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGAT 3245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3246 GAAGATTGGGCTGAACAIGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACA 3305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3306 GTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGG-ACAGCACGGGGGTCC 3364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2476 CTACGACATCTGGGGCAATACAGTCAATGTAGCCAGCAGGATGGNAGTCCACGGGGGTCA 2535
                                                                                                                                                                                                                                                                                                               2925 GTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGA 2984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2745 GGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGA
                                                                                                                                                                                                                                                                 2805 GATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGT
                                                 TATGACCCCTGTGATTCTGCTGTGTTTTGCGCTGGCGCTGTATCTGCATGCTCAGCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3133 -----AGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Hosel, P. A.
APPLICANT: Insel, P. A.
APPLICANT: Ping, P. A.
APPLICANT: Post, S. R.
APPLICANT: Gao, M.
TITLE OF INVENTION: GENE THERAPY FOR CONGESTIVE HEART
TITLE OF INVENTION: GALLERE 1220002056723
CURRENT APPLICATION NUMBER: US,09/750,240
CURRENT FILING DATE: 2001-10-12
PRIOR FILING DATE: 1999-12-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3105 CTACATGGCTGCCTCAGGGCTGAACGCC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2536 TGGGCAACATTCAGGTGGAGAAGGA 2560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3365 CCGACCGAATCCAGGTGACCACGGA 3389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/09750240 Patent No. US20020103147A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
US-09-750-240-1
                                                                                                                                                                                                                                                2865
                                                                              염
                                                                                                                                         qq
                                                 ò
                                                                                                               δ
                                                                                                                                                                               ò
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                       ΩŸ
                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 CCCCGCTATATGAGCTGCCTCCGGGATGCAGAGCCACCCAGCCCCACCCTGCGGGCCCC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCTGGGGCTGCGGGCAGTGGCCCTGGGCTTCGAGGATACCGAGGTGACAACGACGACGAGGG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACGCAATGGGCAGAAGCGTTCGCGGCGCCGTGGCACTCGGGCAGGTGGCTTCTGCACG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ATGTCATGGTTTAGTGGCCTCCTGGTCCTAAAGTGGATGAACGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ATGTCATGGTTTAGTGGCCTCCTGGTCCCTAAAGTGGATGAACGGGAAAACAGCCTGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 CCTCGGTGCCCCTGGCAGGATGACGCCTTCATCCGGAGGGGCGGCCCAGGCCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 295.2; DB 10; Length
Pred. No. 1.2e-63;
0; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 11, Application US/09915582
Patent No. US20020120103A1
GENERAL INFORMATION:
APPLICAMY: Rosen et al.
TITLE OF INVENTION: 17 Human Secreted Proteins
FILE REFERENCE: PS723P1
CURRENT APPLICATION NUMBER: US/09/915,582
CURRENT FILING DATE: 2001-07-27
PRIOR APPLICATION NUMBER: 60/179,065
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: 60/179,065
PRIOR FILING DATE: 2000-01-31
PRIOR APPLICATION NUMBER: 60/180,628
PRIOR FILING DATE: 2000-02-04
PRIOR FILING DATE: 2000-09-12
PRIOR FILING DATE: 2000-09-12
PRIOR FILING DATE: 2000-09-12
PRIOR FILING DATE: 2000-09-12
              PRIOR FILING DATE: 1998-01-16
PRIOR APPLICATION NUMBER: US 08/924,757
PRIOR FILING DATE: 1997-09-05
PRIOR FILING DATE: 1997-09-05
PRIOR FILING DATE: 1997-06-16
PRIOR FILING DATE: 1997-06-16
PRIOR FILING DATE: 1996-09-05
NUMBER OF SEQ ID NOS: 13
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO! 314
APPLICATION NUMBER: US 09/008,097
                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
LOCATION: (1)...(314)
CTHER INFORMATION: n = A,T,C or G
US-09-750-240-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 8.3%;
Best Local Similarity 97.1%;
Matches 300; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Ver.
                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCGGGACG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGGGACCG 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 11
LENGTH: 1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-915-582-11
                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
```

```
2849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   дq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ρp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                             3019
                                                                                                                                                                                                                                                                                                                                                                                                                                             3079
                                                                                                                                                2660 CTGCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGG 2719
                                                                                                                                                                                                                                               2780 TACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGC 2839
                                                                                                                                                                                                                                                                                             2840 IGCATAACATICIGCCCAAGGACGIGGCGGCCCACITCCIGGCCCGGGAGCGCCCGCAAIG 2899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3182 ACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCC 3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3242 AGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGC 3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACAGTATGACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACGGGGG 3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACC 3421
                                                                                                                                                                       189 ccGGAGTGCTGAAGGAGCCCAAACTGATGGGTGCTATCTCCTTCTTCATCTTCTTCA 248
                                                                                                                                                                                                               669 GACAGGATGCACAACAGGATGCTGAACGGAGCTGCAGCCACCATGGCACTATGGTGGAAT 728
                                                                                                                                                                                                                                                             489 TCAAGGAGTTCTACTCTGAATCCAACATCAATCATGAGGCCTAGAGTGTCTGAGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                         909 TCCTTGGCAAAATCCAAGTGACTGAGGAGACAGCATGGGCCCTACAGTCCCTGGGCTACA
                                                                                                                                                                                                2720 CGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAAC
                                                                                                                                                                                                                                                                                                                                             ATGAACTCTACTATCAGTCGTGTGAGTGTGTGCGTTATGTTTGCCTCCATTGCCAACT
                                                                                                                                                                                                                                                                                                                                                          TCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGGTGCCGAGTGCCTGCGGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3080 AAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----ACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACT
                                                                                                    Length 1180;
                                                                                                                            Indels
                                                                                                Score 284.4; DB 10;
Pred. No. 1e-60;
0; Mismatches 321;
                                                                                                  DB 10;
                            O
                            ö
                                                              n equals a, t, g, or
NAME/KEY: SITE
LOCATION: (1163)
OTHER INFORMATION: n equals a,t,g,
NAME/KEY: SITE
LOCATION: (1164)
OTHER INFORMATION: n equals a,t,g,
                                                                                               Query Match 8.0%;
Best Local Similarity 59.8%;
Matches 505; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3140 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAA 3485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAA 1032
                                                                         US-09-915-582-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           696
                                                                                                                                                  ŏ
                                                                                                                                                                                                ð
                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                         οŽ
                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                              염
                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
2729 TGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGCAA 2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2669 GGGTGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCTGTATC 2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAACGAGA 3028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATCA 3088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----CTCCCACATCACTGCCCTGGCTGACTACGCCATGC 3190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              336 AAAAAGAGCGGGAGGAGATAGAGACCATGGAGAACCTGAACCGCGTGCTGCTGGAGAACG 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     276 TTCTGGGTAGACAGAATGAATATTACTGTAGGTTAGACTTCTTATGGAAGAACAAATTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2789 CAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGAACTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      396 TGCTTCCCGCGCACGTGGCTGAGCACTTCCTGGCCAGGAGCCTGAAGAATGAGGAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTATCAGTCGTGTGAGTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITATACAGAATCCGACGTGAACAAGGAGGCCTTGGAATGCCTTCGGNTCCTGAACGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1140;
                                                                                                                                                TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies FILE REFERENCE: PA105
CURRENT APPLICATION NUMBER: US/09/925,297
CURRENT APPLICATION NUMBER: US/09/925,297
CURRENT APPLICATION NUMBER: PCT/US00/05989
PRIOR APPLICATION NUMBER: PCT/US00/05989
PRIOR FILING DATE: 2000-03-08
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 928
SOFTWARE: PATENTIN VET. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 4.6e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7.5%; Score 265.6; 59.8%; Pred. No. 4.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: n equals a,t,g,
NAME/KEY: misc feature
LOCATION: (1135)
COTHER INFORMATION: n equals a,t,g,
US-09-925-297-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a,t,g,
                                                 Sequence 56, Application US/09925297 Patent No. US20020081659A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION: (563)
OTHER INFORMATION: n equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (1115)
OTHER INFORMATION: n equals
NAME/KEY: misc feature
LOCATION: (1119)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best_Local Similarity 59.8
Matches 491; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc feature
                                                                                                   GENERAL INFORMATION:
APPLICANT: Rosen et al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3149 TGGGCCG-----
RESULT 14
US-09-925-297-56
                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 1140
                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
```

ä

```
ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2729 IGCAIGCICAGCAGGIGGAAICGACIGCCCGCCIAAACIICCICIGGAAACIACAGGCAA 2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2789 CAGGGGAAAAAGAGGAGGAGGTACAGGCATACAACCGGAGGCTGCTGCATAACA 2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCTGCCCAAGGACGTGCCGCCCACTTCCTGGCCCGGGAGCGCCCCAATGATGAACTCT 2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTATCAGTCGTGTGAGTGTGTGGGCTGTTATGTTTGCCTCCATTGCCACTTCTCTGGGT 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCATCAGTCCTATGACTGCGTCTGTGTTTGCCTCCGTGCCGGACTTCAAAGTGT 6436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTATGTGGAGCTGGAGGAAACAATGAGGGTGCCGAGTGCCTGCGGGCTGCTCAACGAGA 3028
                                                 3191 GGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGA 3250
                                                                                                                   TTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATG 3310
                                                                                                                                                                                      3311 ACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACGGGGGTCCCCGACC 3370
                                                                                                                                                                                                                                                        3371 GAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGCCTACCAGCTGGAGT 3430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2669 GGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGTTTTGCGCTGGGGCGCTGTATC 2728
                                                                                                                                    756 CCCTGGTAGGGAAGCTGGATGCCATCAACAAGCACTCCTTCAACGACTTCAAATTGCGAG 815
                                                                                                                                                                                                       6552 TCCTGCCAGCCCACGTGCCTGCCCACTTTAT --- CGGTGACAAGTTAAACGAGGACTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 248.2; DB 10; Length 7053;
Pred. No. 2.2e-51;
4; Mismatches 337; Indels 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 792, Application US/09764864
Fatent No. US20020132753A1
GENERAL INFORMATION:
FAPFILGANT: Rosen et al.
TITLE OF INVENTION:
CURRENT APPLICATION NUMBER: US/09/764,864
CURRENT FILIGATION NUMBER: US/09/764,864
CURRENT FILIGA DATE: 2001-01-17
Prior application data removed - consult PALM or file wrapper NUMBER OF SEQ ID NOS: 1792
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 792
LENGTH: 7053
                                                                                                                                                                                                                                                                                                                          GTCGAGGGGTGGTC--AAGGTGAAGGGCAAGGGGGAGATGA 3469
                                                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; LOCATION: (154)
; OTHER INFORMATION: n equals a,t,g, or
US-09-764-864-792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 7.0%;
Best Local Similarity 58.0%;
Matches 497; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-764-864-792/C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                  3251
                                                                                                                                                                                                                                                                                                                          3431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2969
                                                                                                                                                                                                                                                                                                                                                           966
                 g
                                                 ò
                                                                              Db
                                                                                                                δ
                                                                                                                                              g
                                                                                                                                                                                  δ
                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

```
3432
                                                                             6435 TCTACACAGAGTGCGATGTCAACAAGAAGGGCTGGAGTGCCTACGCCTGCTCAATGAGA 6376
                     TCATCGCTGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGGCAGCTGGAAAGATCA 3088
                                                                                                                                                                                                                                                    3433 CGAGGGGTGGTCAAGGTGAAGGGCCAAGGGGGAGATGACCACCTACTTCCTCAATGGGGGC 3492
                                                                                                                                                                                                                                                                                                                3089 AGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCT------GAACGCCA
                                                                                                                                    6255 ACCAGGAGCTGGAGCGKCAGCATGCCCACATTGGTGTCATGGTGGTGAGTTCAGCATCGCCC
                                                                                                                                                                                                                                                                                                  3373 ATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGT
                                                                                                              GCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGCGGC
                                                                                                                                                                                                       GGC-TGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGGCTCGGAAGCCACAGTATGAC
                                                                                                                                                                                                                                                                                                                                                                                           3493 CCCAGCAGTTAACAGGG 3509
                                                                                                                                                                                                                                                                                                                                                                                                         3134
                                                                                                                                                                                                                                                                                                                        6015
                     3029
                                                                                                                                                                                                       3254
                  ŏ
                                        qq
                                                               Ω
                                                                                 g
                                                                                                          ò
                                                                                                                                  q
                                                                                                                                                         à
                                                                                                                                                                           q
                                                                                                                                                                                                      δy
                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                    qq
```

Search completed: March 1, 2003, 09:05:00 Job time : 194.712 secs

						£ .:
Ā	8	*		a et	 •	37 24 3
					·	
					·	
						-

BL255147 602977410
BQ231940 AGENCOURT
BM943080 UI-M-CGOP
ALL19686 DKFZP/61N
AA207907 mv84h06.r
BG07235 602792616
BE37713 60129307
BM964004 UI-M-EQ0BM964004 UI-M-EQ0BM964004 UI-M-EQ0BM964004 UI-M-EQ0BM96505 AUI-69950
BG186950 AUI-69960
BG186950 AUI-69960
BG186950 AUI-M-EX0BF935972 LIC-MT019
BF935972 LIC-MT019
BF935972 LIC-MT019
BF935972 BM66520
BC020148 HOMD SAPING
BE840138 QVO-FN018
BF840138 QVO-FN018
BF653668 277573 MA
BF840138 QVO-FN018
BF653668 QT7573 MA
BF840138 QVO-FN018
BF65368 QVO-FN018
BF65368 QVO-FN018
BF65368 QVO-FN018
BF369868 QVV-GN012
BG0370134 QVV-GN012
BG0370134 QVV-GN012

OM nucleic

ou:

Sedneuce:

Searched:

Database

Result Ş.

```
BM811640 1039 bp mRNA linear EST 05-MAR-2002
AGENCOURT_6489534 NIH_MGC_125 Homo sapiens cDNA clone IMAGE:5724057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: cgapbs remail.nit.gov
Tissue Procurement: Invitrogen
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LiAM12712 row: 1 column: 10
High quality sequence stop: 644.
I. 1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (Dases 1 to 1039)
NIH-MGC http://mgc.ncl.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALIGNMENTS
                                          BI255147
BQ231940
BM943080
                                                                                                                                                             BM090325
AU169950
BQ180663
                                                                                                                                                                                                           BF935972
BE487801
AI905602
AI905641
                                                                                                                                                                                                                                                                    B1680978
BE838164
BB866520
BC020148
BF653668
                                                                                                                                                                                                                                                                                                                                                               AV604444
BI873142
BQ355201
AW481229
BF369868
                                                                                                                                                                                                                                                                                                                                                                                                                                                      BQ370134
BE001572
                                                                                                                                      BE377119
BM964004
                                                                                                                                                                                                                                                                                                                                                                                                                                        BG004182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AI874441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BM811640.1 GI:19128463
 1111110011110
81111110011110
                                                                                                                                                                                              5', mRNA sequence.
BM811640
                                                                                                                                                                                                                                                                                                   618
3369
496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
human.
                                          2532.4
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
4024.8
40
                                                                                                                                                                                                                                                                                                                                                                                                                                                      345.8
342.4
333.2
326.4
326.4
320.4
320.2
311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 1
BM811640
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
BQ881496 AGENCOURT
BF792125 602252571
BE840188 QVO-FN018
BI691747 603307455
BG297229 602394937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BM811640 AGENCOURT
                                                                                                                   (without alignments)
16864.108 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                   February 28, 2003, 21:14:01; Search time 3408.29 Seconds
                                                                                                                                                                                              1 atgtcatggtttagtggcct.......aaggggaccaaggtgggcact 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                                                                                                                                                                                                                                                                                                     32308132
            GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                      16154066 seqs, 8097743376 residues
                                                                                                                                                                                                                                                                                                  Potal number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                       nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BM811640
BQ881496
BF792125
BE840188
BI691747
BG297229
                                                                                                                                                                                                                           IDENTITY_NUC Gapoxt 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_gss_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_gss_vrt:*
em_gss_fun:*
em_gss_mam:*
                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_gss_pro:*
em_gss_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_gss_inv:*
em_gss_pln:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_gss_mus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_gss_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_estba:*
em_esthum:*
em_esthu:*
em_esthu:*
em_estro:*
em_htc:*
em_htc:*
gb_est2:*
gb_est2:*
gb_est2:*
gb_est2:*
gb_est2:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14
112
113
113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_estfun:*
em_estom:*
                                                                                                                                                          US-09-750-240-5
3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_est5:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   *:ss6_dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1039
1016
775
676
1225
1043
                                                                                                                                                                                                                                                                                                                                                                                                                                        EST:*
                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       808.8
772
718.8
593.4
573.6
```

Homo sapi 603359680 602967658

A187441 u126g03.7 F13214 H203KC121 n B181775 UM10502 B1257644 602967566 BC028085 HOMO Sapi B173936 603959680 B1257519 602967658

```
δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
/organism="Homo sapiens"

/db.ref="taxon:9606"
/clone_11b="TiMAGE:5724057"
/clone_11b="NiH_MGE_125"
/lab_host="DH10B"
/l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2109 CTTCCTGCTGCTGCTAATCACCGTGCTGATCTGTGCTGTGTACTCCTGTGGTTCTCTGTT 2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2169 CCCTAAGGCCCTGCAACGTCTGTCCCGCAGCATTGTCCGCTCACGGGCACATAGCACCGC 2228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTIGGCATCTTTCCGTCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTG 2288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2289 TAACCACACCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTGACAT 2348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2349 CACTGCCTGCCACCTGCAGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGA 2408
241 CACTGCCTGCCACCTGCAGCAGCTCAATTACTCTCTGGGCCTGGATGCTCCCCTGTGTGA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTATGACCTACTGCTTGGCGTCCATGGCTTGTTTCCAATGAGACCTTTGATGGCT 2648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2709 GITIGCGCIGCGCIGIAICIGCAIGCICAGCAGGIGGAAICGACIGCCCGCCIAAACII 2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2769 CCTCTGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAA 2828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2469 CTTGGCCAGCTCTGTCTTCCTGCACATCAGCATCGGGAAGTTGGCCATGATCTTTGT 2528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2529 CTTGGGGCTCATCTATTTGGTGCTGCTTCTGGTGGGTCCCCCAGCCGCCATCTTTGACAA 2588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 TAACCACACCCCCATACGGAGCTGTGCAGCCCGGATGCTGAATTTAACACCTGCTGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2409 GGGCACCATGCCACCTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 808.8; DB 14; Length 1039;
Pred. No. 2e-173;
0; Mismatches 23; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                 269 t
                                                                                                                                                                                                                                                                                                                                                                                                              262 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 22.8%;
Best Local Similarity 97.2%;
Matches 833; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                              302 c
                                                                                                                                                                                                                                                                                                                                                                                                                 204
                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   윤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
```

```
AGENCOURT_8229097 Lupski_dorsal_root_ganglion Homo sapiens cDNA clone IMAGE:6182035 5', mRNA sequence.
BQ881496
BQ881496.1 GI:22273504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .
8
                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 1016)

NIH-MGC http://mgc.nci.nih.gov/.

NIH-MGC http://mgc.nci.nih.gov/.

Unpublished (1999)

Contact: Robert Strausberg, Ph.D.
2947
                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: cgapbs remail.nih.gv
Tissue Procurement: Dr. James R. Lupski
cDNA Library Preparation: Life Technologies, Inc.
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gv
Plate: LLAM13567 row: f column: 20
High quality sequence start: 31
High quality sequence stop: 645.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2066 TTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTGCTGAA 2125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCACCGTGCTGATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTGCAAC 2185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2186 GICTGTCCCGCAGCATTGTCCGCTCACGGCACATAGCACCGCAGTTGGCATCTTTCCG 2245
                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42 TCTTCCCACACTCCACCCTGATGCTTGGGATCTATGCCAGCATCTTCCTGCTGCTGCTAA 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
2889 GCGCCGCAATGATGATGATCTACTATCAGTCGTGTGAGTGTGTG-GCTGTTATGTTTGCCT
                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE:6182035"
/clone_lib="Lupski_dorsal_root_ganglion"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 772; DB 14;
Pred. No. 4.8e-165;
0; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 265 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .1016
/organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               268 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21.8%;
94.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Technologies.
                                                                  2948 CCATTGCCAACTTCTCT 2964
                                                                                                 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                 CCATTGGCCAACTTCCT
                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Simines 890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                    RESULT 2
BQ881496
                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                 rocus
                                                                                                                                                                                                                                                                                        SOURCE
                                 g
                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
```

pe

2306

282

2246 222

162

셤 à g ŏ q ò g ò g ò g οy g οy g ٥y 셤 Q g Qγ Q δy g δ g ò g

2426 402 2486

342

2366

2546

522

2606

582

2725

701

641

2666

2784

761

2843

821

2901 881 941

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone=line="InAGE:4345144"
/clone=lib="InHIAGE:484"
/tissue_type="adrenal cortex carcinoma, cell line"
/tasue_type="adrenal cortex carcinoma, cell line"
/tasue_type="adrenal gland; Vector: pcMv-SPORT6; Site_1:
/note="Organ: adrenal gland; Vector: pcMv-SPORT6; Site_1:
NotI; Site_2: SalI; Cloned unidirectionally; oligo-dT
primed. Average insert size 1.229 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."

Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTACAGGCAACAGGGGAAAAAGAG 2802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3043 GATGAGATTATCAGCGAGGGGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGC 3102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCAC 3162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3163 ATCACTGCCCTGGCTGACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAG 3222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131 GTGGCGCCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGAACTCTACTATCAGTCGTGT 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11 GTGGAGTCGACTGCCCGCCTAGACTTCCTCTGGAAACTACAGGCAACAGGGGAGAAGGAG
             Tissue Procurement: ATCC
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can lfound through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov.m column: 17
Plate: LLAM9964 row: m column: 17
High quality sequence stop: 711.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2983 GAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAACACAGAGTGAATGTCTCTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCATAACATTCTGCCCAAGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGCGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGACTCTACTATCAGTCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9923 GAGTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTATGGACAGCACGGGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 12; Length 775;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 718.8; DB 12; Length
Pred. No. 5.9e-153;
0; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20.3%;
al Similarity 98.1%;
738; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                           184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                 sonrce
                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3343
                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE CO
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        775 bp mRNA linear EST 12-JAN-2001
Homo sapiens cDNA clone IMAGE:4345144 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vertebrata; Euteleostomi;
                                                                                                                                                                                                             2425
                                                                                                                                                                                                                                                                                         2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                940
                                                                                                                                                                                                                                                 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoo Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 775)

NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)

Contact: Robert Strausberg, Ph.D.
                                                                         GCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTTTGGCCAGCTCTGTCT
                                                                                                                                                                                                                                                                                                       TCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGGCTCATCTATT
                                                                                                                                                                                                                                                                                                                                                                                   TGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTGCTGCTTCTGCTGGGTCCCCCAGCCACCATCTTTGACAACTATGACCTACTGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGGGT - GCCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATCTGCATGCTCAGCAGGTGGAATCGACTG-CCCGCCTAAACTTCCTCTGGAAACTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCAACAGGGGAAAAAGAGAGGAGTTGG-AGGAGCTACAGGCATACAACCGGAGGCTGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATAACATTCTGCCCAAGGACGTGGCGCCCCACTTCCTGG--CCCGGGAGCGCCGCAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAACTCTACTATCAGTC - - - GTGTGAGTGTGTGCTGTTATGTTTGCCTCCATT - GCCA
                                                       TCCTGCTTGTGTTTACTTCTGCCATTGCCAACATGTTCACCTGTAACCACACCCCCATAC
                                                                                                                                 AGCAGCTCAATTACTCTGTGCTGGATGCTCCCCTGTGTGAGGGCACCATGCCCACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGTCCATGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTICTCTGAGTICTAT-GIGGAGCIGGAGGCAAACAAIGAGGGIG 3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BF792125
602252571F1 NIH_MGC_84
mRNA sequence.
BF792125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BF792125.1 Gi:12097179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST.
```

1;

Gaps

'n

3042

370

430

3282

550

490

DEFINITION

RESULT 3 BF792125 LOCUS

ACCESSION

VERSION KEYWORDS SOURCE

ORGANISM

AUTHORS TITLE JOURNAL COMMENT

REFERENCE

3342

3402

610

2982

us-09-750-240-5.rst

```
EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                   1702
                                                                                    1762
                                                                                                                                                                                                                                                                                                                                                              2002
                                                                                                                                                                                                                                                                                                                                                                                                                               2062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                        1822
                                                                                                                                                                                                                         1882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
BI691747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                 δ
                                                   g
                                                                                    δ
                                                                                                               g
                                                                                                                                                    οy
                                                                                                                                                                                  g
                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                          Óγ
                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                   Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (Dases I to 676)
Dias Neto, E., Garcia Correa, R., Verjovski-Almeida, S., Briones, M.R., Nagai, M.A., da Silva, W. Jr., Zago, M.A., Bordin, S., Costa, F.F., Goldman, G.H., Carvalho, A.F., Matsukuma, A., Baia, G.S., Simpson, D.H., Brunstein, A., deoliveira, P.S., Bucher, P., Jongeneel, C.V., O'Hare Simpson, A.J., Soares, F., Brentani, R.R., Reis, L.F., de Souza, S.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fairl: asimpsoneludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=&t2-QVO-FN0181-100
800-335-d08&t3=2000-08-10&t4=1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  //note="Organ: Prostate_normal; Vector: puc18; Site_1: Smal ; Site_2: Smal; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the puc 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."
                                                                                                                                                                                      BE840188 676 bp mRNA linear EST 22-SEP-2000 QVO-EN0181-100800-335-d08 FN0181 Homo sapiens cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shotgun sequencing of the human transcriptome with ORF expressed
 CTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGTGGTCAAGGTGAAGGGCAAGGGG 3462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTITCCTCATCCTGGGCGCCAGCCAGAAACGGAAAGGGGAAAGGCATGCTGGCCAAG 1701
                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 12; Length 676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence tags
Proc. Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
20202653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16.7%; Score 593.4; DB 12;
llarity 95.9%; Pred. No. 2.1e-124;
Conservative 0; Mismatches 26;
                                                                   GAGATGACCACCTACTTCCTCAATGGGGGCCC 3494
                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="FN0181"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence start: 5
High quality sequence stop: 625.
Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: puc 18 forward
                                                                                                                                                                                                                                     BE840188.1 GI:10272566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1. .676
                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                       BE840188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125
                                                                                                                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          609;
                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                    LOCUS
DEFINITION
 3403
                                                                   3463
                                                                                                 731
                                                                                                                                                                                                                    ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                    RESULT 4
BE840188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
à
                               용
                                                                   ò
                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Mus. Butheria; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (1928)

NIH-MGC http://mgc.nci.nlh.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)

Lonpublished (1999)

Lonpublished (1999)

Longabs-rémail.nih.gov
Tissue Procurement: Jeffrey Green M.D.
CONTAIN Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The L.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
Plate: LLAMI1872 row: n column: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BI691747 12.25 bp mRNA linear EST 18-SEP-2001 603307455F1 NCI_CGAP_Mam6 Mus musculus cDNA clone IMAGE:5343565 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001
                                                        1761
                                                                                                                                                                    1881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTAATCACCGTGCTGATCTGTGCTGTACTCCTGTGGTTCTCTGTTCCCTAAGGCCCTG 2181
                                                                                                                                                                                                                                                                                                                                                                                                     AGCCGTGCCATCGATGCCCGCAGCATTGATCAGCTGCGGAAGGACCATGTGCGCCCGGTTT 1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCGGAGCCTACGTTGCCTGTGCCCTGTTGGTCTTCTGCTTCATCTGCTTCATCCAGCTT 2061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTAATTTTCCCACACTCCACCCTGATGCTTGGGATTTATGCCAGCATCTTCCTGCTG 2121
                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                    242 AAAGACAACGGGGCACCCAAGATGCCCTGAACCTGAGGATGAGGTGGATGAGTTCCTG 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          542 CTAATCACCGTGCTGATCTGTGTGTGTACTCCTGTGGTTCTCTGTTCCCTAAGGGCCCTG 601
62 ACTTTCCTCATCCTGGGCGCCCAGCCAGAACGGAAAGAGGAGAAGGCCATGCTGGCCAAG 121
                                                     1942 TTGCTCACCTTCCAGAGAGAGATTTTGAGAAGAAGTACTCCCGGAAGGTGGATCCCCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        362 CTGCTCACCTTCCAGAGAGATCTTGAGAAGAAGTACTCCCGGAAGGTGCACCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGACAACCGGGGCACCCAAGATGCCCTGAACCCTGAGGATGAGGTGGATGAGTTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2182 CAACGTCTGTCCGCAGCATTGTCCGCTCACGGGC 2216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 602 CAACGTCTGTGCCGCAGCATTGTCCGCTCCGGGGC 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence start: 2
High quality sequence stop: 693.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="FVB/N"
/db_xref="taxon:10090"
/clone="IMAGE:5343565"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BI691747.1 GI:15654376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
BI691747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              house mouse.
```

S

```
9
                                                         /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI: Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies. Investigator providing samples: Jeffrey Green, M.D., NIH"
                                                                                                                                                                                                                                                                                                                                                                                                                                3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3130
                                                                                                                                                                                          2712 TGCGCTGGCGCTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCT 2771
                                                                                                                                                                                                                                       2772 CTGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCG 2831
                                                                                                                                                                                                                                                                                                                                   CCGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTTATG-TTTGCCTCCA 2950
                                                                                                                                                                                                                                                                                                                                                                                   TTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCC 3010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCAC-AGTAT 3309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3310 GACATCTGGGGGAACACAGTGAATGTCTTAGTCGTATGGACAGCACGGGGGTCCCCGAC 3369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3370 CGAATCCAGGTGACCACGGACCTGTACCAGGTTCT-AGCTGCCAAGGGCTACCAGCTGGA 3428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      426
                                                                                                                                                                                                                                                     307
                                                                                                                                                                      Gaps
                                                                                                                                                                                                      GAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCG
                                                                                                                                                                                                                                                                                                                                                                                               TGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAACAATTTCCAGATGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
9
                                                                                                                                          Query Match 16.2%; Score 573.6; DB 13; Length 1225; Best Local Similarity 87.4%; Pred. No. 8.2e-120; Matches 696; Conservative 0; Mismatches 94; Indels 6;
                          ductal carcinoma"
/clone_lib="NCI_CGAP_Mam6"
/sex="female, virgin"
/tissue_type="infiltrating di
/dev_stage="5 months"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCCCCCAGCAGTTA 3503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGGACCCAACAAATA 801
                                                                                                                                            Query Match
                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                            128
                                                                                                                                                                                                                                                                                                                                   2892
                                                                                                                                                                                                                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                                                                                                                                                                                                                       308
                                                                                                                                                                                                                                                                                      2832
                                                                                                                                                                                                                                                                                                                                                          188
                                                                                                                                                                                                                                                                                                                                                                                  2951
                                                                                                                                                                                                                                                                                                                                                                                                                                3011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             547
                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QQ
                                                                                                                                                                                           à
                                                                                                                                                                                                               q
                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                    φ
                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                δý
                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΟŅ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
```

```
BG297229 1043 bp mRNA linear EST 21-FEB-2001 602394937F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:4506705 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ä
                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 1014)

NIH-MGC http://mgc.ndi.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-remail.nih.gov

CDNA Library Preparation: Life Technologies, Inc.

CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2831 GGAGGCTGCTGCATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCGGGAGC 2890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2771 TCTGGAAACTACAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACC 2830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTGGCTGACTACGCCATGC 3190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   130 GCCGCAACGATGAGCTGTACTACCAGTCGTGGAATGTGTGGGCTGTCATGTTGCCTCCA 189
                                                                                                                                                                                                                                                                                                                                                                                           рe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69
                                                                                                                                                                                                                                                                                                                                                                       DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
Plate: LLAMI0382 row: i column: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3011 TGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGCAGCTGGAAAAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2891 GCCGCAATGATGAACTCTACTATCAGTCGTGTGAGTGTGGGCTGTTATGTTTTGCCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         / Match 15.9%; Score 565.8; DB 12; Length 1043; Local Similarity 87.1%; Pred. No. 4.7e-118; Pred. No. 4.7e-118; Pred. O; Mismatches 92; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Mus musculus"
/db_xref="taxon:10090"
/clone="IMAGE:4506705"
                                                                                                                                                                                                                                                                                                                                                                                                                                                               High quality sequence stop: 647. Location/Qualifiers
                                                                                                       BG297229.1 GI:13060672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .1043
                                                                     mRNA sequence.
                                                                                                                                        house mouse.
Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loca
Matches
                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             250
                                                                                                                                                                                                                             AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  310
RESULT 6
BG297229
                                                                                      ACCESSION
                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dβ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

ñ

Gaps

5

Indels

87;

Pred. No. 9.8e-117; 0; Mismatches

87.78;

2543

142

2603

2723

322

2843

442

562

681

```
TGGCGTCCATGGCTTGCCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCTGC 2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2844 TAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGATGA 2903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2904 ACTCTACTATCAGTCGTGTGAGTGTGTGGCTGTTATGTTTGCCTCCATTGCCAACTTCTC 2963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3024 CGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGGGGGGTTCCGGCAGCTGGAAAA 3083
                                                                                                                                                                                                                                                                                                                                                                                2484 CTTCCTGCACATCAGCAGCATCGGGAAGTTGGCCATGATCTTTGTCTTGGGGCTCATCTA
                                                                                                                                   203 TGGCGTCCATGGCTTCGTCCTCCAATGAGACCTTTGATGGGCTGGACTGCCCAGCTGT
                                                                                                                                                                                                                                                                                                                                 263 GGGAGGGTAGCGCTCAAATATATGACCCCCGTGATTCTGCTGCTGGTGTTTGCCCTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 443 TAACATTCCTCCAAGGACGTGGCCGCCCACTTCCTGGCCCGGGAACGCCCCAACGATGA
                                                   2424 CTGCAGCTTTCCTGAGGTGTCCATCGGGAACATGCTGCTGAGTCTCTTGGCCAGCTCTGT
                                                                                  23 CTGCAGCTTCCCTGAGTACTTCGTCGGGAACGTGCTGCTGAGTCTTCTAGCCAGCTCTGT
                                                                                                                                                                                  2544 TITGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTGCT
                                                                                                                                                                                                    143 CTTGGTGCTTTTTGCTGGTCCCCCGGCCGCCATCTTTGACAACTATGATCTACTGCT
                                                                                                                                                                                                                                                                                                                  2664 AGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCTGGCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                               2784 GGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             623 TGAGATCATCGCAGACTTTGACGAGATCATCAGTGAGGAGAGATTCCGGCAG-TGGAGAA
Best Local Similarity 87.7
Matches 634; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3144 TCA 3146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                   2604
                                                                                                                                                                                                                                                                                                                                                                                 2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
BG287169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                     å
                                                                                g
                                                                                                                 ò
                                                                                                                                              g
                                                                                                                                                                                   ò
                                                                                                                                                                                                             g
                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                        Dp
                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                      οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΫ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ISM Muss muscoulus
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota: Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Mus.
CE 1 (bases 1 to 743)
RS NIH-MGC http://mgc.nci.nih.gov/.
Intinutes of Health, Mammalian Gene Collection (MGC)
Intinutes of Health, Mammalian Gene Collection (MGC)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: Jeffrey Green M.D.
Contact: Robert Strausberg, The I.M.A.G.E. Consortium (ILNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAMINBY9 row: j column: 04
High quality sequence stop: 741.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BIG85206 743 bp mRNA linear EST 18-SEP-2001 603310213F1 NCI_CGAP_Mam6 Mus musculus CDNA clone IMAGE:5346147 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Organ: mammary; Vector: pCMV-SPORT6; Site_1: Sall; Site_2: NotI; Cloned unidirectionally. Primer: Oligo dT. Library constructed by Life Technologies. Investigator providing samples: Jeffrey Green, M.D., NIH"

208 c 213 g 173 t
                                                                                                                                                                                                                                  3430
                                                                                                                 3371 GAATCCAGGTGACCACGGACCTGTACCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGT
                                                                                                                                                                                                                                                                                               3431 G-TCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGGAGATGACCACCTACTTCCTCAATGGG
                                                                                              3251 TIGGGCTGAACATGGGCCCAGTCGTGGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATG
                                                                                                                                                                ACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGCACGGGGGTCCCCGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="IMAGE:5346147"
/clone_lib="NCI_CGAP_Mam6"
/sex="female, virgin"
/tissue_type="Infiltrating ductal carcinoma"
/dev_stage="5 months"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Mus musculus"
/strain="FVB/N"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BI685206.1 GI:15647834
                                                                                                                                                                                                                                                                                                                                                               GGCCCCAGCAGTTAACAGG 3508
                                                                                                                                                                                                                                                                                                                                                                                GGCACCAGCAGGTAGCAAG 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
BI685206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                3311
                                                                                                                                                                                               550
                                                                                                                                                                                                                                                                                                                                                               3490
                                                                                                                                                                                                                                                                                                                                                                                             728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 7
BI685206
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                              ò
                                                             8
                                                                                            ò
                                                                                                                         g
                                                                                                                                                             ò
                                                                                                                                                                                        g
                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                       a
```

```
BG287169 796 bp mRNA linear EST 21-FEB-2001 6023818888F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4499589 5',
                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 796)

NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                      Contact: Robert Strausberg, Ph.D.
                                                 mRNA sequence.
BG287169
BG287169.1 GI:13040741
                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
```

DB 13; Length 743;

15.8%; Score 559.8;

Query Match

```
AATTCAGCTTGAAAGGGACCAAGGTGGGCATT
                                                                                                                                                                                                                                                                                                                                                                                                            Proc. Nat
20202663
                                                                                                                                                                            human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brazil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                      DEFINITION
                                                                                                                                                                                              ORGANISM
                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1256
598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1436
                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                   RESULT 9
BG993320
                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE CO
ORIGIN
                                                                                                                                                                            SOURCE
                                                                                      LOCUS
 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ď,
                                                                                                                                                                                                                                                         /clone_lib="NIH_MGC_93"
/clone_lib="NIH_MGC_93"
/clone_lib="NIH_MGC_93"
/lasue_type="transitional cell papilloma, cell line"
/lab_host="DH10B (phage-resistant)"
/note="Organ: bladder; Vector: pCWV-SPORT6; Site_1: Not!;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Site_1: Sall; Cloned unidirectionally; oligo-dT primed.
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCA 3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTGAGTGTGTGTGTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAG 2979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGGTTCTCAACGAGATCATCGCTGAC 3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3040 ITTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGT 3099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGGAGATGACCACCTACTTCCT-CAATGGGGGCCCCCAGCAGTTAACAGGGCCCAGCCAC 3518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3100 AGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCC 3159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACATCACTGCCCTGGCTGACTACGCCCATGCGGCTCATGGAGCAGATGAAGCACATCAAT 3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGGAACACAGTGAATGTCTCT 3339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GITCTAGCTGCCAAGGCCTACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGCCAAG 3459
                                                              DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.go.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -TIGATGAGATTATCAGCGAGGAGGAGGTTCCGGCAGCTGGAAAAGATCAAGACA-TGGT 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCA 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 TGAAGGIGTGTGGCTGTTATG-TIGCCTCCATTGCCAACTICTCTGAGTTCTATGTGGAG 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3340 AGTCGTATGGACAGGACGGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 12; Length 796;
                           CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 549.6; DB 12,
Pred. No. 2.1e-114;
0; Mismatches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAATTCAGCTG-AAGGGACCAAGGTGGGCACT 3549
                                                                                                                                                                                                                            /organism="Homo sapiens"/db_xref="taxon:9606"
                                                                                                                                                    High quality sequence start: 7
High quality sequence stop: 680.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: cgapbs-r@mail.nih.gov
                  Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15.5%;
97.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 613; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        538
                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Óλ
```

```
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="H10999"
/dev_stage="Adult"
/dev_stage="Adult"
/note="Organ: head_neck; Vector: puc18; Site_1: Sma1;
Site_2: Sma1; A min1-library was made by cloning products
derived from ORESTES PCR (U.S. Letters Patent application
No. 196,716 - Ludwig Institute for Cancer Research)
profiles into the pUC 18 vector. Reverse transcription of
tissue mRNA and CDNA amplification were performed under
low stringency conditions."
                                                                                                                                                                                           Homo sapiens
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 581)
Dias Neto,E., Garcia Correa,R., Verjovski-Almeida,S., Briones,M.R.,
Nagal,M.A., da Sllva,W. Jr., Zago,M.A., Bordin,S., Costa,F.F.,
Goldman,G.H., Carvalho,A.F., Matsukuma,A., Baia,G.S., Slmpson,D.H.,
Brunsteain,A., deoliveira,P.S., Bucher,P., Jongeneel,C.V., O'Hare
,M.J., Soares,F., Brentani,R.R., Reis,L.F., de Souza,S.J. and
ысэуэлго
MR3-HT0999-070201-003-h04 HT0999 Homo sapiens CDNA, mRNA sequence.
BG993320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fax: +55-11-2707001

Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=MR3&t2=MR3-HT0999-070201-003-h04&t3=2001-02-07&t4=1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rua Prof. Antonio Prudente 109, 4 andar, 01509-010, Sao Paulo-SP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shotgun sequencing of the human transcriptome with ORF expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTGAGGATCAAGATCTTGGGGGACTGTTACTACTGTGTGTCAGGGCTGCCGGAGGCCC 1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGCCGACCATGCCCACTGCTGTGGAGATGGGGGTAGACATGATTGAGGCCATCTCGC 1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGTACGTGAGGTGACAGGTGTGAATGTGAACATGCGCGTGGGCCATCCACAGCGGGCGCG 1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17 GCCTGAGGATCAAGATCTTGGGGGAC-GTTACTACTGTGTGTCAGGGCTGCCGGAGGCCC 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 581;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Natl. Acad. Sci. U.S.A. 97 (7), 3491-3496 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 540.2; DB 13
Pred. No. 2.6e-112;
0; Mismatches 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Laboratory of Cancer Genetics
Ludwig Institute for Cancer Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seq primer: puc 18 forward
High quality sequence stop: 581
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199 g
                                                                                                   BG993320.1 GI:14397390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Simpson A.J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tch 15.2%;
al Similarity 98.2%;
556; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence tags
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Simpson, A.J.
```

;;

g

æ

```
2542 TATTTGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGACAT 3314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGACAT 790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
BQ231940
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                          a
                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                   Ω
                                                                         g
                                                                                                    Ω
                                                                                                                             g
                                                                                                                                                      οy
                                                                                                                                                                          g
                                                                                                                                                                                                      ò
                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ٥y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                       BI255147 17-JUL-2001 602977410F1 NIH_MGC_12 Homo sapiens cDNA clone IMAGE:5122130 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 790)

NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Organ: cervix; Vector: pCMV-SPORT6; Site_1: Not1; Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT. Average insert size 1.4 kb. Library prepared by Life
                                                                                                                                                                                                                             1556 CACTGCAGTACCTGAACGGGGACTACGAAGTGGAGCCAGGCCGTGGTGGCAAGCGCAACG 1615
                                                                                                                            AAGAGGAGAAAGGCATGCTGGCCAAGCTGCAGCGGACTCGGGCCAACTCCATGGAAGGGC 1735
                         1496 CCCTGGCCAACCACATGGAAGCAGGAAGCCGGGCTGGCCGCATCCACATCACTCGGGCAA 1555
                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: Incyte Genomics, Inc.
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM11298 row: d column: 03
                                                                                                                                                                                          18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15.0%; Score 532.4; DB 13; Length 790;
89.9%; Pred. No. 1.7e-110;
.ive 0; Mismatches 61; Indels 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="InAGE:5122130"
/clone_llb="NIH_MGC_12"
/tlssue_type="cervical carcinoma cell line"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             High quality sequence stop: 634.
Location/Qualifiers
                                                                                                                                                                                                                                                                                 GCCAGATGGGCATTGATGATTCCAGC 1821
                                                                                                                                                                                                                                                                                           231 g
                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
BI255147
BI255147.1 GI:14808265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Technologies."
202 c 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
es 707; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                   human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                            1616 (
                                                                                                                                                                              1676
                                                                                                                                                                                                                                                                                                                                           RESULT 10
BI255147
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                               1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                1796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                   g
셤
                         ö
                                                요
                                                                        ò
                                                                                                D
                                                                                                                          õ
                                                                                                                                              Ω
                                                                                                                                                                           ò
                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                      g
```

```
bp mRNA linear EST 02-MAY-2002
Homo sapiens cDNA clone IMAGE:6067056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                               2721
                                                                                                                                                                                           2781
                                                                                                                                                                                                                                                                                                                                               2901
                                                                                                                                                                                                                                                                                                                                                                                                                         2902 GAACTCTACTATCAGTCGTGTGTGTGTGGTGTTATGTTTGCCTCCATTGCC-AACTT 2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2961 CTCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGCTGCT 3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3137 -CCTACGATC--AGGIGGCCGCTCCCACATCACTGCCCTGGCTGACTAC-GCCATGCGG 3192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3193 CTCATGGAGCAGATGAAGCACATCAATGA---GCACTCCTTCAACAATTTCCAGATGAAG 3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         126
                                                                                                                                                                                                                               245
                                                                                                                                                                                                                                                                                       246 CAGGCAACAGGGGAGAAGGAGAGAGAGAGGAGGAGAACAGGCATACAACGGAGGCTGCTG 305
                                                                                                                                                                                                                                                                                                                                                                   605 CCTTACGATCCAGGGGGCGGTCCCCACATTATGTGCCCTGTTGACTACGGCCATGCGG 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     665 TCATTGGAGCAGATGAAGCACATCAATGACGCACTTCCTTTCAACAATTTCCAGATTAAG 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 (bases 1 to 905)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                       2782 CAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                 2842 CATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGAT
10 TATTIGGIGCIG-TICIGCIGGGICCCCCAGCCACCATCTTIGACAACTAIGACCTACTG
                                   2602 CTTGGCGTCCATGGCTTGGCTTCTACAATGAGACCTTTGATGGGCTGGACTGTCCAGCT
                                                       4 AGENCOURT_7543660 NIH_MGC_92 Ho 5', mRNA sequence.
BQ231940 GI:20413340
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
TITLE
JOURNAL
```

```
2842 CATAACATTCTGCCCAAGGACGTGGCGGCCCACTTCCTGGCCCGGGAGCGCCGCAATGAT 2901
                                                         house mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                discovery
                                                                                                                                                                                                                                                                                                                                                                         Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          487
 ACCESSION
VERSION
                                                                                                                                                                                                              MEDLINE
COMMENT
                                                                                                                                                                                               JOURNAL
                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BM943080 607 bp mRNA linear EST 29-APR-2002 UI-M-CG0p-beo-d-02-0-UI.rl NIH_BMAP_Ret4_S2 Mus musculus cDNA clone UI-M-CG0p-beo-d-02-0-UI 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                             /tissue_type="embryonal carcinoma, cell line"
/lab.host="embryonal carcinoma, cell line"
/lab.host="nulum (phage-resistant)"
/note="lorgan: testis, vector: pcnv-Sporr6; Site_1: NotI;
Site_2: Sali; Cloned unidirectionally; oligo-dT primed.
Average insert size 2.5 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NH_MGC Library. I others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCCCACATCACTGCCCTGGCTGACTACGCCATGCGGCTCATGGAGCAGATGAAGCACAT 3215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAATGAGCACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGT 3275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGG 3455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGGGGGAGATGACCACCTACCTCCAATGGGGGCCCCCAGCAGTTAACAGGGCCCCAGC 3515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAAAAGATCAAGACGAT 3095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCG 3155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCAGGTGTCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGGACACACAGTGATGT 3335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361 CCAGGTTCTAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421 CAAGGGGGAGATGACCACCTACTTCCTCAATGGGGGCCCCAGCAGTTAACAGGGCCCAGC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 TGACTTTGATGAGATTATCAGCGAGGGGGGTTCCGGCAGCTGGAAAAGATCAAGACGAT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Gaps
                                              CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.llnl.gov
http://mage.llnl.gov
Plate: LLAM13345 row: p column: 01
High quality sequence stop: 609.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 14; Length 905;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14.4%; Score 512.4; DB 14.99.8%; Pred. No. 6.6e-106; tive 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACAAATTCAGCTGAAGGGACCAAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481 CACAAATTCAGCTGAAGGACCAAGGTGGGCATT 514
                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:6067056"
/clone_lib="NIH_MGC_92"
 Robert Strausberg, Ph.D.
                Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 99.8
Matches 513; Conservative
                                                                                                                                                                                                              . 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
BM943080/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                           FEATURES
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
/organism="Mus musculus"
/strain="c57BL/6J"
/db_raref="texton:10090"
/clone="11b="NIH_BMAP_Ret4_S2"
/lab_host="Blu10B (Life Technologies)"
/note="Vector: p7730-pac (Pharmacia) with a modified
polylinker; Site_1: Not I; Site_2: Eco RI; The
NIH_BMAP_Ret4_S2 library is a subtracted library,
ultimately derived from mouse retina tissue libraries at
various stages of development. For a detailed description
of the library from which this clone was derived, please
visit our web site at brainest.eng.uiowa.edu. The tissue
for this library was contributed by Dr. Xin-Yuan Fu, Yale
University School of Medicine"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ij
                                                                                                            Mus musculus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mamanlai; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 607)
Bonaldo,M.F., Lennon,G. and Soares,M.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowe CDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa Clone Distribution: Researchers may obtain clones from Research Genetics (www.resgen.com).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2542 TATITGGTGCTGCTTCTGCTGGGTCCCCCAGCCGCCATCTTTGACAACTATGACCTACTG 2601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2602 CTTGGCGTCCATGGCTTGGCTTCTTCCAATGAGACCTTTGATGGGCTGGACTGTCCAGCT 2661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2782 CAGGCAACAGGGGAAAAAGAGGAGATGGAGGAGCTACAGGCATACAACCGGAGGCTGCTG 2841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2662 GCAGGGAGGGTGGCCCTCAAATATATGACCCCTGTGATTCTGCTGGTGTTTGCGCCTGGCG 2721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2722 CTGTATCTGCATGCTCAGCAGGTGGAATCGACTGCCCGCCTAAACTTCCTCTGGAAACTA 2781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              607 TACTIGGIGCTGCTTINIGCTGGTCCCCCGCCCATCTNIGACAACTAIGATTACTG 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tissue Procurement: Dr. Xin-Yuan Fu, Yale University School of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                     ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      æ
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.9%; Score 494.8; DB 14; Length 607; 88.9%; Pred. No. 5.9e-102;
                                                                                                                                                                                                                                                                                                                                       97044477
Contact: Chin, H
National Institute of Mental Health
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda,
20892-9643, USA
Tel: 301 443 1706
Fax: 301 443 9890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                  Genome Res. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            162 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: mEST@mail.nih.gov
BM943080
BM943080.1 GI:19402943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seg primer: M13 REVERSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      547; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .607
```

```
1 GTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGGCAAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA207907.1 GI:1804964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MGI:407635
                                                                                                                                                                                                                                                                                                                                                                                                                                                            3415 GGCTACC 3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCTACC 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
AA207907
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                              2995
                                                                                                                                                    3115
                                                                                                                                                                                                               3175
                                                                                                                                                                                                                                                                                                                                     3295
                                                                                                                                                                                                                                                                                                                                                                                                  3355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                            3235
                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                              ò
                                                        g
                                                                                          ò
                                                                                                                 Dp
                                                                                                                                                   οy
                                                                                                                                                                               g
                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                           ğ
                                                                                                                                                                                                                                                                                                       පු
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                            엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                          AL119686

DKFZp761N2323_r1 761 (synonym: hamy2) Homo sapiens cDNA clone
DKFZp761N2323 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Am Klopferspitz 18a D-82152 Martinsried, Germany
This is the 5' sequence of the clone insert
Clone from S. Wiemann, Molecular Genome Analysis, German Cancer
Research Center (DKE2); Email s. WiemanneGkfz- heidelberg.de;
sequenced by GBF (National Research Centre for Biotechnology Ltd.,
Braunschweig/Germany) within the cDNA sequencing consortium of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bloecker, H., Boecher, M., Brandt, P., Mewes, H.W., Gassenhuber, J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 487)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Berlin.
6, 14059
                                                                                                                                                                  3022 AACGAGATCATCGCTGACTTTGATGAGATTATCAGCGAGGAGCGGTTCCGGCAGCTGGAA 3081
                                                                                                                                                                                                                             3082 AAGATCAAGACGATTGGTAGCACCTACATGGCTGCCTCAGGGCTGAACGCCCAGCACCTAC 3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2935 GTTATGTTTGCCTCCATTGCCAACTTCTCTGAGTTCTATGTGGAGCTGGAGCAAAT 2994
                                                                                                      2962 TCTGAGTTCTATGTGGAGCTGGAGGCAAACAATGAGGGTGCCGAGTGCCTGCGGGCTGCTC 3021
187 TCGGAGTTCTACGTGGAGCTCGAGGCAAACAACGAGGCGTGGAGTGCCTGCGGCTGCTC 128
                                                                                                                                                                                                 16
                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : pSport1; Site_1: Not1; Site_2: Sal1"
142 g 102 t
                                                                                                                                                                                 GAACTCTACTATCAGTCGTGTGTGTGTGGTGTTTATGTTTGCCTCCATTGCCAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               German Genome Project.
No sl sequence available.
This clone (DKF2p761N2323) is available at the RZPD in Please contact the RZPD: Ressourcenzentrum, Heubnerweg Berlin-Charlottenburg, GERMANY; Email: clone@tzpd.de.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="DKFZp761N2323"
/clone_lib="761 (synonym: hamy2)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .,
6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match 13.7%; Score 485.4; DB 9; Local Similarity 99.8%; Pred. No. 7.7e-100; les 486; Conservative 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="amygdala"
/dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note-"Vector:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AL119686.1 GI:5925585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Bloecker, et al.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Bloecker H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             129 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1999)
                                                                                                                                                                                                                                                                                        3142 GATCAGGTGGGCCGC 3156
                                                                                                                                                                                                                                                                                                                    15 GACCAGGTCGGCCGC 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wiemann, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MIPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                          2902
                                                                                                                                                                                                                                                                                                                                                                RESULT 13
AL119686
                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
            음
                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                 g
                                          ò
                                                                        g
                                                                                                   ò
                                                                                                                                 a
                                                                                                                                                                 ò
                                                                                                                                                                                            q
                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
```

```
AA207907
mv84h06.rl GuayWoodford Beier mouse kidney day 7 Mus musculus cDNA clone IMAGE:661787 5' similar to 9b:M93422 Mouse adenylyl cyclase type VI mRNA, complete cds (WOUSE);, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    house mouse.

Mus musculus
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bukaryota, Metazoa; Chordata; Craniata; Wertebrata; Euteleostomi;
I (bases 1 to 652)
Marra,M., Hillier,L., Allen,M., Bowles,M., Dietrich,N., Dubuque,T.,
Geisel,S., Kucaba,T., Lacy,M., Le,M., Martin,J., Morris,M.,
Schellenberg,K., Steptoe,M., Tan,F., Underwood,K., Morre,B.,
Theising,B., Wylie,T., Lennon,G., Soares,B., Wilson,R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This clone is available royalty-free through LLNL ; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
                                                                                                               3114
                                                                                                                                                                                                                               3174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3354
                                                                                                                                                                                                                                                                                                                                                 GCTGACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGCACTCCTTCAAC 3234
                                                                                                                                                                     180
                                                                                                                                                                                                                                                                181 GCCTCAGGGCTGAACGCCAGCACCATACGATCAGGTGGGCCGCTCCCACATCACTGCCCTG 240
                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                      61 GAGGGTGTCGAGTGCCTGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATC 120
                                                                                                                                          121 AGGAGGAGGGTTCCGGCAGCTGGAAAAAATCAAGACGATTGGTAGCACCTACATGGCT
GAGGGTGCCGAGTGCCTGCGGCTGCTCAACGAGATCATCGCTGACTTTGATGAGATTATC
                                                                                                                                                                                                                                  GCCTCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACATCACTGCCCTG
                                                                                                                                                                                                                                                                                                                                                                                  AATTTCCAGATGAAGATTGGGCTGAACATGGGCCCCAGTCGTGGCAGGTGTCATCGGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGAAGCCACAGTATGACATCTGGGGGAACACAGTGAATGTCTCTAGTCGTATGGACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCGAGGAGCGGTTCCGGCAGCTGGAAAGATCAAGACGATTGGTAGCACCTACATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Marra M/Mouse EST Project
WashU-HHMI Mouse EST Project
Washington University School of MedicineP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 primer: -28ml3 revl ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Waterston, R.
The WashU-HHMI Mouse EST Project
Unpublished (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: mouseest@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seq primer: -28m13 revl ET from High quality sequence stop: 417.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /strain="C57BL/6J"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
```

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
ORIGIN
                                         REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   565 bp mRNA linear EST 29\text{-MAY-}2001 Mus musculus cDNA clone IMAGE:4923890 5',
      /clone=lib="Gaugwoodford Beier mouse kidney day 7"
/tissue_type="kidney"
/tissue_type="kidney"
/tissue_type="kidney"
/dev_stage="juvenile"
/tab_host="sold"
/lab_host="sold"
/la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCAAACAATGAGGGTGCCGAGTGCCTGCTGCTCAACGAGATCATCGCTGACTTTG 3043
                                                                                                                                                                                                                                                                                                                                                                                                   2924 AGIGIGIGGCIGITAIGITIGCCICCAIIGCCAACIICICIGAGIICIAIGIGGAGCIGG 2983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGAGATTATCAGCGAGGGGGTTCCGGCAGCTGGAAAAGATCAAGACGATTGGTAGCA 3103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTACATGGCTGCCTCAGGGCTGAACGCCAGCACCTACGATCAGGTGGGCCGCTCCCACA 3163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCACTGCCCTGGCTGACTACGCCATGCGGCTCATGGAGCAGATGAAGCACATCAATGAGC 3223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTCCTTCAACAATTTCCAGATGAAGATTGGGCTGAACATGGGCCCAGTCGTGGCCAGGTG 3283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCATCGGGGCTCGGAAGCCACAGTATGACATCTGGGGGAACACACTGAATGTCTCTAGTC 3343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTATGGACAGGGGGGTCCCCGACCGAATCCAGGTGACCACGGACCTGTACCAGGTTC 3403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGCTGCCAAGGGCTACCAGCTGCAGTGTCGAGGGGTGGTCAAGGTGAAGGGCAAGGGGG 3463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATGACCACCTACTTCCTCAATGGGGGCCCCCAGCAGTTAACAGGGCCCAGGCCACAAATT 3523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            TAGCTGCCAAGGGCTACCAGCTGGAGTGTCGAGGGGTGGTCAAGGTGAAGGGGAAAGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13.3%; Score 473.2; DB 9; Length 652; llarity 85.8%; Pred. No. 5.1e-97; Conservative 0; Mismatches 88; Indels 1
                                                                                                                                                                                                                                             1 others
                                                                                                                                                                                                                                           138 t
                                                                                                                                                                                                                    Lisa Guay-Woodford."
156 c 199 g 13
/clone="IMAGE:661787"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3524 CAGCTGAAGGGACCAAGGTGGGCACT 3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCAGCCGAGGGACCCAAGGTGGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        602792616F1 NCI_CGAP_SG2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG872335.1 GI:14222875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
BG872335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    house mouse.
Mus musculus
                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG872335
                                                                                                                                                                                                                                                                                                                                                   Matches 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST
                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
BG872335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δŻ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
```

```
/note="Organ: salivary gland; Vector: pcMV-SPORT6; Site_1: Not1; Site_2: Sal1; Cloned unidirectionally. Primer: Oligo arr. Average insert size 1.3 kb. Constructed by Life Technologies. Note: this is a NCI_CGAP Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ä
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
1 (bases 1 to 565)
                                                                                                                       Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: Gapbs-Tefanil.nih.gov
Tissue Procurement: Jeffrey E. Green, M.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM10845 row: p column: 03
High quality sequence start: 11
High quality sequence start: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1067 AAGACATCAACACAAAAAAAGAAGAC---ATGTTCCACAAGATCTACATACAGAAGCATG 1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCGGAGGCCCGGGCCGACCATGCCCACTGCTGTGGAGATGGGGGGTAGACATGATTG 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAATGATGTGACCCTGGCCAACCACATGGAAGCAGAAGCCGGGCTGGCCGCATCCACA 1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1124 ACAATGTCAGCATCCTGTTTGCAGACATTGAGGGCTTCACCAGCCTGGCATCCCAGTGCA 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACTCGGGCAACACTGCAGTACCTGAACGGGGACTACGA-AGTGGAGCCAGGCCGTGGT 1602
                                                                                                                                                                                                                                                                                                          pe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 ATANTGTCAGCATCCTGTTTGCGGACATTGAGGGCTTCACCAGCCTGGCCTCCCAGTGCA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 AAGACATCAACAAAAAAAAGAGGACATGATGTTCCATAAGATCTACATCCAGAAGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGCGGGCGCGTGCACTGCGGCGTGCTTGCGGAAATGGCAGTTCGATGTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 463.4; DB 12; Length 565;
Pred. No. 8.3e-95;
0; Mismatches 46; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="IMAGE:4923890"
/clone_lib="NCI_CGAP_SG2"
/lab_host="DH10B (Tl phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
1. :565
/organism="Mus musculus"
/strain="FVB/N"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 91.2%;
Matches 515; Conservative 0
```

Search completed: March 1, 2003, 03:52:47 Job time: 3447.62 secs